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Our Contributors

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Justin J. Condon is General Manager of Whirlpool Corporation's Appliance Manufacturing Division at St. Joseph, Michigan. Prior to this he was Industrial Relations Director there. He holds an A.B. degree from Cornell University and an M.A. degree from the University of Washington. His previous business career was with Continental Can Company, where he was associated with the national sales organization. During World War II he served as director of military personnel, Army Forces Western Pacific. He serves as member or director of the Twin Cities Safety Council, the Community Chest and the Chamber of Commerce in St. Joseph.

Malcolm L. Denise is Vice-President for Labor Relations of Ford Motor Company. He has been a key member of the company's labor contract negotiating team since 1946, when he joined the company's legal staff, and he was chairman of the company committee which negotiated the three-year Ford-UAW agreement signed in September, 1958. Mr. Denise holds B.A. and J.D. degrees from the University of Michigan, where he was a student editor of the *Michigan Law Review*. He was an industry member of the Wage Stabilization Board in 1951-52 and has been active in a number of organizations and advisory groups in the fields of industrial relations and law, including the Industrial Relations Research Association and the State Bar of Michigan.

Malcolm P. Ferguson has been President of the Bendix Corporation since 1946. A graduate of Syracuse University, he was awarded an honorary Doctor of Science degree from his alma mater in 1955. He is also a trustee of that institution. Mr. Ferguson is Vice Chairman and Director of the Automotive Safety Foundation and on the board of governors of the Aerospace Industries Association and Providence Hospital, Detroit. He is a director of the U. S. Rubber Company, the Detroit Economic Club and the Greater Detroit Board of Commerce. In 1958 he was awarded the Legion of Honor

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by the French government. The present article is adapted from a speech delivered as part of the Graduate School of Business Administration Lecture Series at Michigan State University on March 1, 1961.

Stanley C. Hollander is Professor of Marketing in the Graduate School of Business Administration, Michigan State University. He is a graduate of New York University and holds an M.A. degree from the American University and a Ph.D. degree from the University of Pennsylvania. He is on the editorial staff of the *Journal of Marketing*, and has written widely in this field. Among his most recent publications is a book of readings, *Explorations in Retailing*, published in 1959 by the Bureau of Business and Economic Research, Michigan State University, and extensively used as a textbook. *Henry Ford: Inventor of the Supermarket?* is another work of his recently published by the Bureau. Currently Professor Hollander is on leave from Michigan State University while engaged in a research project at the University of California.

Mordechai Kreinin is Professor of Economics at Michigan State University. His undergraduate work was done in Israel at the University of Tel-Aviv and he holds M.A. and Ph.D. degrees in economics from the University of Michigan. Professor Kreinin is a specialist in international economics and has written extensively in this field. Among his most recent articles are "The GATT Negotiations of 1960" and "Foreign Investments and Domestic Employment," which appeared in *Business Topics* in Summer 1960 and Winter 1961 respectively. Currently he is on leave from Michigan State University and in Israel under the auspices of the Ford Foundation's international program; there he is participating in a study of Israel's technical assistance program to African countries.

Lawrence M. Sommers is Professor and Head of the Department of Geography, Michigan State University, where he has taught since 1949. He holds B.S. and Ph.M. degrees from the University of Wisconsin and a Ph.D. degree from Northwestern University. Professor Sommers has made extensive studies of the geography of northern European countries, including research projects on geographical aspects of the Norwegian fishing industry and on the regional geography of Bornholm, Denmark. He was a member of the Seminar on International Aspects of Economics and Business sponsored by International Programs, Michigan State University and Ford Foundation in 1958. The material for the present article was collected during a recent sabbatical leave spent in western Europe.

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MALCOLM L. DENISE

Unemployment and Automation

The complex relationship between them points up the need for faster economic growth.

Among the issues which are of concern to observers of the American economy is the relationship between automation and unemployment. These are two distinct phenomena, and the connection between them is widely and profoundly misunderstood. Everyone is in agreement on the undesirability of having almost 7 percent of the labor force out of work. However, there is little agreement on the part automation plays in the employment picture, or even on the meaning of the term.

When the word was coined in 1946 by a pioneer Ford manufacturing executive, D. S. Harder, it described a specific system for automatic handling of parts between successive production processes. Before long, however, the meaning of the term was completely out of our control.

In his book *Automation and Management* James R. Bright writes:

> Few words of recent years have been so twisted to suit a multitude of purposes and phobias as this new word, 'automation.' It has been used as a technological rallying cry, a manufacturing goal, an engineering challenge, an advertising slogan, a labor campaign banner, and as the symbol of ominous technological progress.

Bright lists 24 definitions of the word.

In popular usage, automation has come to mean nothing more than technological improvement—any development, however unsophisticated, that leads to greater productivity. When an obsolete plant is replaced by a modern, efficient one, many newspapers almost instinctively refer to automation, no matter how conventional the new plant may be. And when commodities are packed in over-sized boxes before being loaded on ships, this too is described as automation.

I would have no great quarrel with this usage provided it were universally understood and did not serve to distort perspective. "Automation" is much

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easier to say than "increased efficiency resulting from technological improvement." I intend to use the word in this broad sense except when explicitly limiting my meaning to a narrower definition.

A Dangerous Assumption

It is disturbing that the term automation has taken on an additional meaning that has no relevance to real life. Although no one actually defines it this way in so many words, automation is frequently used to mean anything that causes unemployment. Everyone has heard it said, as though it were true by definition, that since we have too much unemployment, something must be done about automation.

It is easy to see how this confusion has developed. Quite understandably, people have been deeply impressed by some of the more spectacular examples of automation that have been widely publicized in recent years. Everyone knows about engine blocks that are machined without benefit of human hands; everyone has heard of chemical plants that almost run themselves.

It is easy enough to jump from such examples to the conclusion that the wizards of the laboratories are on the verge of making people obsolete, and, indeed, already have begun to do so. When, at the same time, unemployment rises, it is perhaps only natural to conclude that our unemployment problems are the inevitable result of automation.

These easy conclusions have gained widespread acceptance. The result is that the very word automation calls to mind a mental picture of radical new automatic devices, spreading like wildfire, leaving behind a trail of useless, idle men.

THE FACTS ON PRODUCTIVITY

There is no quarreling with the fact that automation often means more effective, efficient use of labor, with mechanical energy and automatic controls taking the place of some of the human energy and human direction that otherwise would be required. In this technical sense, automation frequently displaces labor, but such displacement is not synonymous with unemployment.

There is nothing new or mysterious about the substitution of mechanical for human energy. This is the basis of rising productivity, economic growth and improved living standards. It always has been and always will be. The human energy released by technological gains is thereby made available for other productive work, and the evidence of the past tells us that the net result is not fewer jobs, but more rewarding jobs.

Today, however, we hear that this lesson is no longer valid. Automation is proceeding so rapidly, according to some, that the economy is swamped with displaced labor that cannot be absorbed unless we take heroic remedies.

Nothing Dramatic

If we are, in fact, suffering from galloping productivity, then it may well be that automation is a prime cause of today's high unemployment. If this is not the case, however, then automation is just another name for our old friend, technological improvement, at least as far as its impact on employment is concerned. In this case,

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we must look for some other reasons to explain why the economy is now unable to make use of the available labor supply.

What are the facts? Is productivity increasing by leaps and bounds? As far as the available statistics show, it is my understanding that the only remarkable jump in productivity in any major segment of the economy in the last ten years is that which has occurred in agriculture. And Professor Paul A. Samuelson of the Massachusetts Institute of Technology stated to the House of Representatives' Holland Subcommittee on Unemployment and Automation on March 21, 1961, that nothing dramatic has happened in quantitative terms to productivity.

The Labor Supply

The reason for rising unemployment is that the economy is not growing fast enough to provide all the jobs that our growing population seeks. Although employment is currently at a record high level, the supply of labor is increasing even faster than the demand. More rapid growth, a stronger demand for labor, would soon put an end to complaints about automation. I concur entirely in Professor Samuelson's statement to the Holland Subcommittee, "If we are very successful in maintaining a high level of effective demand, and without inflation for a number of years, the structural unemployment will melt more and more."

EFFICIENCY AND EMPLOYMENT

The lack of any necessary causal relationship between automation and unemployment is illustrated by our experience at Ford Motor Company.

After World War II, the management of Ford Motor Company decided that the company was not equipped to compete effectively, in terms of costs or products, when the post-war seller's market disappeared.

As one of several actions to remedy the situation, Ford undertook an expansion and modernization program which involved the expenditure of over $2.5 billion on plants and facilities through 1957.

The company sought to equip its plants, both old and new, with the most modern and efficient equipment and processes for performing its various operations. By far the greater part of our so-called "Detroit automation" was installed during the period 1951-57, with the bulk of it in operation by the end of 1954.

During this period, the company's production was expanding. Where it had been able to produce and sell less than one million vehicles in 1946, and only slightly more than that in 1947 and 1948, by 1953 it produced almost two million units. Each year since, except 1958, it has exceeded that figure by varying amounts. Ford employment also was rising during the years when this automation was being installed. After only relatively brief periods of unemployment, at worst, the company was able to absorb seniority employees whose jobs had been affected by new processes and movements of operations and who had not declined opportunities for other company employment.

We are convinced that had we not made these improvements in efficiency, Ford Motor Company could not have prospered and grown; rather than having higher employment, it would

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have far less, and very possibly none. We have been able to market cars at prices that consumers are willing and able to pay, despite the fact that our labor costs for each hour worked have more than doubled since 1946. It seems clear, then, that the net result of the introduction of automation and other efficiencies in our productive processes was to increase, rather than decrease, our employment.

Generating Jobs

A striking example of how improved technology can generate employment is furnished by Ford's experience in the manufacture of transmissions. In 1950 nearly all Ford vehicles had manual transmissions produced by the company. Some 3,100 hourly employees were engaged in their manufacture.

In subsequent years, improvements in design and in manufacturing technology brought automatic transmissions — vastly more complicated mechanisms—within the reach of the mass market. As a result, during 1960 some 9,000 Ford employees — about three times the number in 1950—were engaged in the manufacture of transmissions for its products, while vehicle production had increased by only one-eighth.

ERRONEOUS NOTIONS

Our experience also has a bearing on the notion apparently prevailing in some quarters that people displaced by automation or other technological change constitute an identifiable group, with respect to whom separate policies can be formulated and applied. The fact is that in a dynamic economy people are constantly changing employment status and jobs for a wide variety of reasons. We have found it impossible to identify any substantial group of laid-off Ford employees whose unemployment is attributable solely to automation as such. Changes in processes and technology occur simultaneously with changes in demand, product design, product mix and sourcing, with normal attrition in our work force and with other factors. All of these, in the aggregate, affect employment levels and placement opportunities, both company-wide and in particular plants.

But even if an accurate count of the immediately "displaced" were possible, it would have little, if any, significance as an indicator of automation's net effect on employment. The real measure of this would be the difference between the number actually employed at any given time and the number that would be employed at that time if no automation had occurred. The latter situation simply isn't present to be measured. Clearly, we cannot use as a basis the employment level on the affected operations prior to automation. To do so would require us to assume that other unrelated factors had not affected employment in the meantime, and, even more fallaciously, that buying decisions of customers are not influenced by the relative values available to them.

Employment and Sales

To get back to Ford, what do the figures show about our employment? They show, in the first place, that total Ford non-defense employment increased from 124,000 in 1946 to 166,000 in 1960. If we exclude the Korean war years, the only substantial de-

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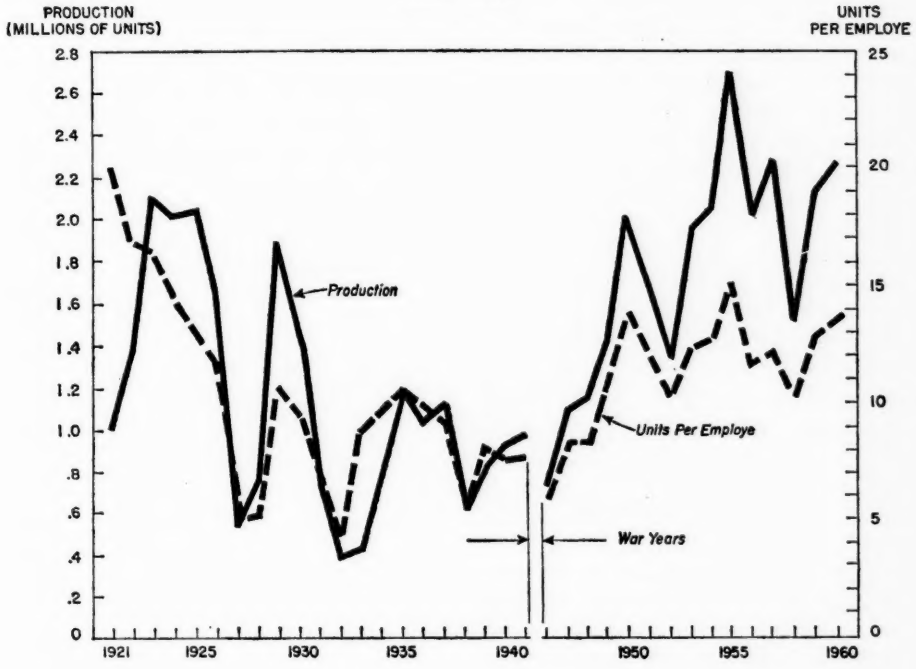
FORD MOTOR COMPANY
PRODUCTION AND UNITS PER EMPLOYE
1921 - 1960



creases in non-defense employment during this whole period occurred in 1958 and again beginning late last year. In both cases, lay-offs were the result of sharp declines in sales, not of automation.[1]

In fact, the clearest conclusion emerging from our employment statistics is that Ford employment depends directly on our sales. The fact is that employment does not fluctuate as widely as sales because our efficiency goes up as volume goes up, and vice versa. The accompanying chart compares total unit production by Ford Motor Company with the trend in annual units produced per employee on our rolls for the last 40 years. This is not an index of productivity in a technical sense. It merely highlights the overwhelming influence of volume on the number of units produced per employee. For example, in 1946, when we produced only about 700,000 units, production per employee was about 6½ units. By 1950, with production at 2 million, units per employee were up to almost 14. Since then, the trend in units per employee has consistently followed the trend in total units.

Efficiency

During the early post-war years, 1946-49, production and units per employee were relatively low. The fact

is that Ford was a very inefficient company immediately after the war. It was losing money rapidly and would have gone straight into bankruptcy if we had not succeeded in raising efficiency substantially. Because our efficiency was abnormally and dangerously low during these early post-war years, the use of data from this period as a benchmark for comparing changes in employment and production during the entire post-war period would be highly misleading. After 1950, we no longer had the opportunity to achieve the same sharp gains in efficiency as those that occurred between 1946 and 1950.[2]

The chart points up the fact that in spite of all the talk about bigger production with fewer employees, there has been no consistent increase in unit production per employee. For example, in 1960 we produced about 13½ units per employee, slightly fewer than in 1950, and about the same as in the mid-1920's. General Motors has reported similar experience. In testimony before the Senate Special Committee on Unemployment Problems in November, 1959, Mr. Louis G. Seaton, Vice President, General Motors Corporation, said:

> Contrary to popular impression, mechanization—or "automation"—has not reduced the amount of man-hours that go into building a General Motors automobile. The reason is that the greatly improved cars and trucks of today are mechanically more complex and hence more complicated to produce than their counterparts of even a few years ago. Thus, while mechanization and improved processes have reduced man-hours on some operations, improvements, resulting in increased complexity of the vehicles, have been an offsetting factor. Accordingly, the number of cars produced per employee per year has remained substantially constant over the years —10.9 cars in 1949 and the same number in 1958.

A CHANGING MARKET

Much has been made of the fact that since the 1958 recession automobile employment has returned only to about the 1957 level, in spite of the fact that production in 1960 was higher than in 1957. Since there has been relatively little new automation in the industry since 1957, the explanation must be found in other developments. The principal reason is that the auto market has changed radically since 1957.

Until that year, growing sales were accompanied by growing employment in spite of increasing efficiency because consumers were demanding, and the industry was building, more car per car—bigger, more powerful cars, with more automatic equipment and more luxury accessories. Because of technological advances, the industry was able to provide more car per car with only moderate price increases.

The Compact Car

The public is aware of the decline in the medium-price car market after 1957, and of the rapid rise in compact car production since mid-1959. In 1957, medium and higher price cars accounted for 37 percent of U. S. passenger car production, while the one compact make accounted for less than two percent. Last year, medium and higher-price cars accounted for only 24 percent of production, while ten compacts accounted for 29 percent. In 1957, 83 percent of the cars produced were equipped with eight cylinder engines; last year, only 57 percent. The percentage equipped with automatic transmissions fell from 80 to 73 percent. Smaller, simpler, cheaper cars, with fewer accessories, take

less material and less work to build. Again, therefore, the lesson is clear: employment in our industry depends, in the last analysis, on the consumer.

EFFICIENCY AND PROFIT

So far, I have been trying to demonstrate that automation cannot be isolated as a cause of unemployment. Indeed, it seems self-evident that automation and other improvements in efficiency lead to employment, not unemployment. People are more likely to lose jobs in companies and industries that are falling behind competitively, that are inefficient and have meager profits, than they are in those that are efficient and profitable.

How does an enterprise become efficient and profitable? How does it stay efficient and profitable in an increasingly competitive world? First of all, it must produce a commodity that customers are willing to buy in considerable volume at a price that is in line with the prices of competitive products, and that yields a profit sufficient to attract investor capital.

No company today can meet these goals without relying heavily on automation, again defined in the broadest sense. To the extent that our economy automates, we will continue to have a sound basis for rising national income and a rising standard of living. To the extent that we fail to automate, nothing else we do can protect us from shrinking markets, economic stagnation, and difficulty in finding work for all those willing and able to work.

A Slow Advance

Is it possible that the economy may automate too rapidly in the future—so rapidly that it does become impossible to reabsorb in other jobs the workers who are displaced? My own impression is that this is not very likely. Many types of automation are expensive and can add costly rigidities to productive facilities. The decision to automate or not is seldom clear cut. Frequently, at least in my industry, the gains do not appear worth the investment. As I have already pointed out, the major advances in our own facilities were completed more than five years ago. Since then, advances in automation have been slow, though steady.

Limiting Factors

Final automobile assembly operations do not lend themselves readily to automation. This is particularly true where the product is varied and subject to frequent change as it is in the American auto industry. As a matter of fact, in some operations, notably stamping, where automation techniques had been introduced we have been forced to reduce the degree of automation in order to obtain greater flexibility in responding to changes in consumer demand. It is often said that somehow automation will require greater stability of demand, in terms of both quantity and variety of products. It seems to me that this is an upside down view of the dynamics of a free market. Ford is a big company only because customers have freely decided to buy our products. The company's fate will continue to rest on this foundation. Only by doing whatever is necessary to win their favor can we remain a healthy, vigorous, progressive enterprise. We cannot afford the kind of automation that will limit our ability to respond to con-

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sumers. It is much more likely that the characteristics of demand will continue to limit the rate, and influence the type, of automation, rather than the other way around.

Another factor that limits the rate of automation is the human mind. Substantially more rapid progress depends, I think, on the more advanced automation techniques — electronic controls, feed-back, numerical programming of machine tools, etc. People who can design, install, and manage the use of advanced automated facilities are still in very short supply. I suspect that we have an even shorter supply of the kind of imagination and foresight that can appreciate the possibilities that science lays before us. I suspect also that it will take a good many years to develop the attitudes and outlook that will make rapid automation both feasible and profitable. In short, I fear that we may automate too slowly rather than too rapidly.

RETROSPECT AND SURMISE

In thinking about the future, I always find it helpful to look back at the past. During the last 60 years the American economy has had the benefit of advances that would have seemed fantastic if anyone had had the foresight to predict them in 1900. The list includes the substitution of electrical and internal combustion motors for human, animal and steam power, and of petroleum and natural gas for coal and wood, the tremendous multiplication of electrical generating capacity, the development of highway, air, and pipeline transportation, the burgeoning of the assembly line and other mass production techniques, the application of science and mechanization to agriculture, the systematic study of management principles, the enormous growth of the engineering profession, explosive developments in physics and chemistry. Each of us could name a thousand things more that were beyond the wildest dreams of our own fathers.

As a result of these developments, together with a vast growth in capital investment, we have managed to increase our productivity, as measured by output per man-hour, at an average rate of about 2.2 percent per year in the total private economy. To permit a similar rate of productivity increase over the next 50 or 60 years, we must have new developments as dramatic, as far-reaching, as inconceivable as the developments of the past 60 years would have seemed in 1900. In other words, I don't put a great deal of stock in glib statements that work will soon be obsolete because we have learned how to build computers and employ electronic controls. It will not be an easy or a simple task even to maintain the past rate of productivity increase from our present high base.

New Products

Before I leave this question, it might be helpful to consider briefly some of the less obvious gains of automation from the viewpoint of employment. John Diebold has pointed out that automation has already begun to create new products and new industries. He reminds us:

> The entire atomic energy industry, present and future, rests on automation, for no human could operate valves or hand controls within an atomic reactor and live. Polyethylene, the flexible plastic widely used for packaging and squeeze bottles, could not be made without automation. Color television, at a price

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that could attract a large market, will depend on automatic machines to lay on the picture tube the hundreds of thousands of accurately spaced colored dots.[8]

One of the secrets of sales success in our own industry in the years ahead will be the ability to offer the buyer a car that is closely tailored to his own individual needs and preferences. The variety of choices open to the customer is already so broad that Ford could go through an entire year's production run without making two cars identical in every respect. It would be literally impossible to provide anything approaching this range of choices if we did not have electronic computers to help us solve the enormous problem of supplying the right components to the assembly line precisely when they are needed.

New Technology

New operations research techniques and data processing tools make it possible for our engineers and managers to operate far more efficiently and effectively, to gain information that we never had before, information that will lead directly to much better, more durable cars.

In short, computer technology opens up entirely new avenues that are inaccessible from other approaches because of time, or cost, or other factors. Many of these new avenues will lead to increased employment, via the stimulation of demand by new or better or cheaper products. Some of them will lead to more stable employment via better management.

CONCLUSION

• People lose jobs for a multitude of reasons—reasons that are not mutually exclusive. Usually a number of them are interacting simultaneously. These reasons include changes in technology, replacement of obsolete facilities, shifts in the location of major market areas, changes in plant layout, competition from foreign producers, development of substitute materials, reorganization of work, elimination of feather-bedding, management incompetence, changes in consumer tastes, fluctuations in business activity. The list could be extended indefinitely. It would have to include the failure of employers to automate or otherwise improve efficiency so as to remain competitive.

The relationship between automation and employment is highly complex. Automation has positive as well as negative effects on employment. Neither can be isolated from the influence of other factors operating at the same time. I am firmly convinced that efforts to explain current unemployment in terms of the impact of automation have done much more to confuse than to clarify the problems that confront us. I am equally of the view that the one major remedy for unemployment is faster economic growth, and that any program to preserve jobs that would penalize or limit the introduction of automation or the modernization of plants and equipment would be self-defeating since it would certainly slow the necessary rate of economic growth.

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Footnotes

1. It has been argued that automation has permitted Ford to absorb work previously done by other companies (usually referred to as "integration"), with the result that unemployment attributable to automation is reflected in reduced employment levels in supplier firms.

Precise data to measure directly the effect of integration at Ford (which has no necessary relationship to automation) on outside employment are not available. We can look, however, at the value of materials, supplies, and services purchased from outside vendors (which does not include capitalized expenditures) as a proportion of the total value of Ford sales. This obviously does not measure the labor content that goes into outside purchases, has no adjustment for defense activities, and can be influenced to some degree by factors extraneous to this discussion. Nevertheless, the data are considered to be of some significance:

Year	*Value of Purchases From Outside Vendors as a Percent of Ford Sales*
1950	58.5%
1951	58.7
1952	54.8
1953	58.8
1954	57.3
1955	56.0
1956	57.5
1957	59.8
1958	60.7
1959	53.7
1960	54.7

This does not suggest that there has been a massive net shift of work away from outside suppliers to Ford.

2. Government statistics covering the early years following reconversion to automotive production from World War II for the industry as a whole indicate that the popular practice of using 1947 as a base date for comparing employment and production is highly misleading. For example, using BLS employment figures for the Motor Vehicle and Equipment Manufacturing Industry, it is often noted that employment rose only .6% from 1947 to 1960, while vehicle production rose 64%.

But the same BLS series also shows an employment increase from 1940 to 1947 of 45.9%, as against a production increase of 7.3%. Moreover, it shows an employment increase of 18.6% between 1940 and 1958—the lowest production year of the fifties—in contrast to a rise in vehicle production of only 14.8%.

If the foregoing suggests that statistics must be approached with some caution, so does the fact that the Standard Industrial Classification system used by the Government in compiling employment and certain other statistics does not include in the Motor Vehicle and Equipment Manufacturing Industry large numbers of persons (whether employed by the major producers or by supplier firms) who in fact are employed in manufacturing vehicle components, and undoubtedly includes some who are not.

This is not intended as a criticism of the Government's classification system; it simply reflects the fact that the product is heterogeneous, involving outputs from many industrial classifications.

3. John Diebold, "Automation, Its Impact on Business and Labor," NPA Planning Pamphlet No. 106, May 1959, p. 29.

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STANLEY C. HOLLANDER

Measuring the Cost and Value Of Marketing

A discussion of the complexities and frustrations of evaluating one of the vital functions of modern business[1]

When did marketing begin? When were the first criticisms of marketing voiced? We do not know the answer to either question, but we can be certain of two things. One is that the function of marketing, that is, trade and exchange, has been part of the human economic system for many thousands of years. The other is that criticisms and defenses of trading activities are almost as old as trade itself. In 1776, these criticisms provoked a thundering answer from Adam Smith:

> The statute of Edward VI, therefore, by prohibiting as much as possible any middleman from coming in between the grower and the consumer, endeavoured to annihilate a trade, of which the free exercise is not only the best palliative of the inconveniences of a dearth, but the best preventative of that calamity: after the trade of the farmer, *no trade contributing so much to the growing of corn as that of the corn merchant.*[2]

Smith declared: "The popular fear of engrossing and forestalling [buying for resale] may be compared to the popular terrors and suspicions of witchcraft."[3] Today the fear of witchcraft seems to have abated; it has been many years since books attacking witches made the best-seller lists. But the persistent popularity of books attacking marketing suggests that the fear of engrossers and forestallers has not vanished. The attacks have, of course, aroused a ready response, and the marketing journals have been filled with criticisms of the critics, interspersed with a modicum of self-criticism.

As is true of most such debates, the discussions have tended to generate considerably more heat than light. Only in fairly recent years have we had any really serious attempts to measure both the costs and the benefits of marketing in our society. The dearth of such studies is not the fault

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of the many serious and well-intentioned people who have debated the value of marketing. It is simply an indication of the complexity and magnitude of the problem.

A PRODUCTIVITY ANALOGY

The difficulty of measuring marketing productivity may be illustrated by attacking a comparable problem: attempting to measure the productivity of a magazine article. An examination of the silent post-mortem in which you will indulge after finishing this or any other article will suggest some of the difficulties we face when we try to evaluate the marketing system.

In either case, we are trying to determine a ratio. On the one hand, we have the inputs into the system—the social and individual contributions to the product or process, and on the other hand, we have the outputs—the social and individual benefits. If the benefits are high in proportion to the inputs, we describe the article, the product, or the system in question as *highly productive.* But if the ratio is low, then the system is not very productive. The concept is simple to state; the real problems arise when we attempt to apply it.

Types of Input

The reading experiences that provide the final tests of a magazine article's value result from two major categories of inputs. One group consists of those supplied by the publisher and the people and firms associated with him. These include the work of paper and ink manufacturers, printers and production craftsmen, the postal service and the newsdealers, editorial employees, illustrators, and even authors. Supposedly the value of their services is measured by the prices and wages these contributors receive during the process of assembling and distributing the magazine. But this supposition involves a number of assumptions to which we will want to return shortly. Magazines, like every other product and service, present a number of unique problems in social cost measurement. For example, publications that derive much of their revenue from advertising may incur heavy production and promotional expenses so as to attract the readership that will attract advertising, which in turn, may, in various ways, affect the prices and sales of the commodities advertised. Under such circumstances it is often difficult to determine the exact inputs provided by each participant. A similar quandary arises out of the eternal debate between the publishers and the postmasters-general over the relationship of postal charges to the costs of furnishing postal services.

Another group of inputs is extremely important and many of these are often overlooked. These are provided by the readers, and include their time and effort as well as whatever they may pay, directly or indirectly, for the publication. These inputs are analogous to the time, effort and money expended by consumers in both the shopping and the consumption process. And, from the standpoint of the individual consumer, these are the personal costs that must be balanced against the personal benefits.

Simple Evaluation

Let us start with the simplest version of this problem; the individual

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judgment each one of you will make after finishing this article or this issue of *Business Topics*. Undoubtedly, you will ask yourself whether it has been worth reading or not. Not *how* worthwhile, or *how* it compares with other things you might have read instead, but simply: am I pleased or not that I decided to take the time to read this article? This is the sort of judgment that we all make frequently. Yet notice how often our reactions are ambivalent. We say of some experience or book or lecture, "I guess it was worthwhile," or "I don't know—it wasn't too bad," or "I'm rather glad I read it, and yet maybe I could have used the time more profitably."

Now it is no wonder that our judgments are sometimes vague. To decide that reading a particular article, or engaging in any other activity, is worthwhile involves a very complex accounting process. Very few of us have enough time to do all the things we would like to do, or to read all the things that we would like to read. The segments of time that we invest in reading a particular article may be especially precious segments, on a busy day or when there are many alternative activities clamoring for our attention. Then again, the time may consist of minutes spent in the dentist's anteroom, when there is little else that we can do and when we really only want a little intellectual anaesthesia before climbing into the chair. The article may demand considerable attention and intellectual effort, which we may consider as output, as a source of enjoyment (witness the pleasure many people derive from solving puzzles) or, under other circumstances and at other times, we may consider as input, as an unwarranted drain on our energies. The benefits of our reading are elusive and subtle. We may obtain intellectual exercise, new insight, stimulation and entertainment. Or our reading may prove stultifying, boring, or misleading. All of this we have to balance in some rough and ready fashion before we can say whether the magazine was, or was not, worthwhile.

Complexities of Evaluation

However, this is still at the kindergarten level in productivity evaluation. Let us look at two more problems of greater complexity. One arises out of the fact that such rough balance sheets are really inadequate for comparative purposes or for social appraisals. Suppose, in the course of a year, that each of us reads two hundred magazine issues. Each issue consumes its own combination of time, money and energy; each yields its own patterns of information, insight and entertainment. How can we compare these two hundred: can we rank them in an ordinal line, and will our judgments be consistent each time that we express them? How can we add these two hundred patterns into a composite figure if we want to compare this year's reading with last year's, or with the magazines we read ten years ago? How can we make comparisons between, say, the magazines published in the U. S. and those published in other countries, or between publications issued under various auspices? What measures can we use to quantify either the inputs or the outputs, and how do we relate them to each other? It is perfectly apparent that these considerations are frivolous and frustrating, yet

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this is exactly the sort of problem we face when we try to make comparative judgments about the productivity of marketing.

But the problem is still more complex. Magazine articles are written in the hope of reaching large audiences. Each member of that audience is an individual. Each has his own standards, each has his own alternative ways of spending his time, each seeks his own particular satisfactions and ends. None is a replica of the others. In evaluating the effectiveness of an article, how can we add all of their tastes, inclinations and judgments into a single composite whole? Shall we regard one person's intense pleasure as the equivalent of several people's mild displeasure? Shall we allow extra, or reduced, weight in our calculus to the connoisseurs, to those who are the most sensitive to small differences, or to those whose swings on the manic-depressive axis are the widest?

WEIGHING THE COSTS

Conceptualizing and evaluating are equally difficult in any attempt to aggregate all of the inputs and outputs of a complex economic system. Given certain assumptions and conditions, it is relatively easy to measure the physical results of highly specific, small operations. For example, it is not too hard to determine which of two machines is more efficient at punching out sardine cans. This may involve some judgments about the relative cost of labor, capital and raw materials in the future. For example, one machine may be more efficient at low levels of output and the other at high levels, so some judgments have to be made about the nature of future demand for sardine cans. But practical, workable estimates can be made, and some of these judgments work out fairly well. Similarly, we can compare two different methods of putting those sardine cans on the supermarket shelves, subject to some assumptions as to the total number of cans to be stacked, the cost of labor, and the alternative uses for the stockmen's time in the store. But the only available measure, aside from miscellaneous hunches, guesses and opinions, of whether the whole operation is worthwhile is whether enough people buy those sardines to warrant allocating the social energies necessary to produce canned sardines instead of something else.

There seem to be only two measures by which we can evaluate the total inputs into the total marketing system. One is hours of labor, the other is monetary costs. Both have their limitations.

Labor as a Measure

Labor hours are not all homogenous, and hence we have a problem if we try to use number of hours worked in marketing as the measure of marketing cost. How can we properly equate an hour of time worked by an unskilled laborer with an hour of time spent by a highly trained engineer or architect? They are both human beings. Moreover, the job that is assigned to the laborer may be far more burdensome than the work performed by the professional. But each hour of the skilled man's time represents an expenditure of the human capital invested in training, and so, in a sense, constitutes a higher cost than does an hour of com-

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mon labor. The problem can be resolved through evaluating each hour of labor at its actual wage or salary rate, but this approach leads into the monetary problems we will face in a moment. Another difficulty, of somewhat less significance, bothers the statisticians who try to compute labor productivity figures. They argue whether it is more accurate to use actual hours worked as the labor investment, or whether paid vacations, holidays and sick leaves should be added. The issue is often described as the question of hours worked versus hours paid for. (Although it would drive the statisticians crazy, conceptually one might be justified in including some portion of the future hours to be spent in paid retirement as part of this year's "labor paid for.")

Another problem is more difficult. The number of hours invested in marketing measures, at any one moment, only a portion of the total cost of the system. Our economy also draws upon natural resources and upon the capital that the past has produced. We can only equate units of capital and units of labor by converting them to a common factor — their monetary value. This again leads us to the problems inherent in applying monetary measures to marketing input.

Money as a Measure

Some of these problems are technical in nature. For example, should we evaluate the capital equipment used in any one year on the basis of its original cost, original cost minus depreciation (and if so, at what rate), cost to reproduce, or cost to replace with modern equipment? How shall we measure the labor of unpaid family workers? What shall we do about deferred compensation? More basic problems center around two major assumptions that underlie the use of monetary costs as a measure of input. When we use monetary costs expended in the private sector as our measure, we are, in effect, assuming that the government's contribution to marketing, which is considerable, is roughly equal to the net tax burden (also considerable), that is levied upon marketing. If the contribution and the taxes are unequal, then one party is, in a sense, contributing more to the bargain than it derives from the other. Our other assumption is that the costs represent free market values, that each dollar earned represents equal sacrifices, that each dollar spent obtains equal pleasure, and that there has been no exploitation of any of the participants in the system.

But there is an even more fundamental problem. The U.S. Census uses a monetary concept, "the value added by manufacturing," to measure the output of the manufacturing industry. The value-added figure is obtained by subtracting the total cost of the materials (and some services) that manufacturing industry purchases from the total amount of its sales. Many writers now advocate using a similar concept in marketing. A moment's reflection, however, shows that this concept of output is roughly equivalent to a monetary cost measure of input. Profits are usually a relatively small portion of the total figure and certainly are, at least in part, the price of certain managerial and entrepreneurial services. So, under this accounting, input and output will always be roughly equal.

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Consumer Satisfaction

The most difficult part of the whole business is to measure the real output of marketing. In spite of all talk about motivation research, hidden persuaders and the like, we really seem to know very little about what people want from the marketing system. An example from retail distribution may help to illustrate this point.

One school of thought holds that most people look upon stores very largely as places in which they can obtain merchandise. According to this point of view, people consider shopping as a nuisance, and are most satisfied when they can obtain their purchases with minimum expenditures of time, money, and effort. Some interesting experiments with shopping games and with records of consumer behavior tend to substantiate this view, although the results are by no means conclusive.[4] On the other hand, there is the view advanced by many motivational researchers and by some very successful merchants, that people like to shop. The advocates of this position maintain that shopping is an end in itself, apart from the goods that are purchased, and that the retail system should be designed to maximize the pleasures of shopping.[5] Now, of course, no hard and fast election can be made between these two approaches. Much depends upon the customer, the products being purchased, the place and the time. Some people seem to react to shopping differently than others.[6] Most people will display one attitude when buying antiques, and another when purchasing a tube of toothpaste. Some people, who normally try to rush in and out of the supermarket, will be willing, when traveling, to spend hours in the quaint native marketplace, probably much to the annoyance of the natives. If we have only ten minutes in which to catch a plane, we want the airport newstand to have our favorite magazine readily accessible; if we have two hours to kill between planes we like the airport bookstore that permits uninterrupted browsing. But even after allowing for all of these differences, we find that a fundamental question for both managerial strategy and social evaluation in retailing has been answered only indifferently and on an *ad hoc* basis. The devices for identifying and measuring consumer satisfaction in any general sense are limited to votes in the market place, which is probably the most significant single argument for a free market place.

COST RESEARCH

A few unusually dedicated analysts have attempted to measure the costs of marketing in our society, in the face of all the difficulties we have noted and in spite of a number of technical obstacles we have not considered. In general, these people have been well aware of the problems and limitations inherent in their work. But they have felt that even a rough approximation of the actual figures would be ample reward for the herculean labors involved in such a task.

Stewart and Dewhurst

By far the best known single study of this sort is *Does Distribution Cost Too Much?* (New York: Twentieth Century Fund, 1938), a study conducted by Professors Paul W. Stewart and J. Frederic Dewhurst under the

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sponsorship of the Fund. Stewart and Dewhurst worked with census figures on purchases and sales, and other data, to trace the 1929 flow of commodities in this country from original sources (agriculture, importation, and extractive industries) to final buyers (consumers, institutions, public utilities, and export) via such intermediate levels as manufacturing and trade. Increases in value resulting from transportation and from wholesale and retail trade were assigned as costs of marketing, increases at the manufacturing level were apportioned between marketing and processing. Stewart and Dewhurst estimated that, in 1929, final buyers absorbed $65.6 billion worth of finished tangible goods, of which three-fourths, or $49 billion, went to individual ultimate family consumers. These figures do not include the consumption of services, such as haircuts, medical attention or personal transportation. Total marketing costs for this $65 billion worth of goods were estimated at $38.5 billion.

In other words, according to this analysis, retailing, wholesaling, transportation, advertising, selling and other marketing activities took 59¢ out of every consumption dollar spent on goods or tangible commodities. This figure, which as we shall see has been subjected to some very serious criticism, included marketing and transportation expenses at all levels. Thus, it embraced practically all of the selling and distribution expenses involved in transferring cotton to the yarn spinner, in transferring cotton yarn to the fabric weaver, and in transferring fabric to the shirt manufacturer, as well as the marketing costs involved in moving finished shirts to the consumer. Stewart and Dewhurst were careful to point out that their figure, 59¢, was meaningless unless it was compared with what distribution did in return for its compensation. They also were careful to point out that a more efficient manufacturing system, turning out large quantities and obtaining economies of scale, would necessitate a more complex marketing system. Nevertheless, in reading their report one can sense a sort of physiocratic bias, a feeling that changes in form utility ought to be relatively more costly than changes in time, place and possession utility.

Barger Study

In 1955, Harold Barger, relying on the vast data collections assembled by the National Bureau of Economic Research, published his study *Distribution's Place in the American Economy since 1869* (Princeton: Princeton University Press, 1955). This is generally regarded as the most authoritative work yet published on the subject. Barger limited his analysis to wholesale and retail trade, and did not include manufacturers' marketing costs, as did Stewart and Dewhurst.

Barger was not overly impressed with distribution's performance in some respects. He concluded, for example, that labor productivity per man hour increased in commodity production at an annual rate of 2.6 percent per year from 1869 to 1949. Contrasted with this, he found that productivity in distribution went up only about 1 percent per year. The analysis is somewhat limited, since the measure used, total volume handled, does not allow for changes in functions performed. However, probably most of

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the difference is due to the greater relative application of machinery and other forms of capital in manufacturing than in trade.

However, he did find that wholesaling and retailing accounted for only about 35- 36¢ out of the consumer's dollar in 1929. Since he was working with only a portion of the total distributive activity for that year, rather than with the whole, we should expect his figure to be smaller than the Stewart and Dewhurst 59¢. However most analysts, including Barger, believe that part of the discrepancy is really a correction of the old figure, that would reduce it by an indeterminate amount, perhaps 8 or 9¢.

Cox Study

For the last several years Reavis Cox and some of his associates at the University of Pennsylvania have been conducting an investigation of marketing costs to serve as a companion to, or as a revision of, the Stewart and Dewhurst study. Their work has not yet been published, although it should be released in the near future. Cox gave an advance presentation of some of their findings at the 1960 meeting of the American Statistical Association. There he disclosed that an analysis of the Bureau of Labor Statistics' massive input-output table for the U. S. economy in 1947 revealed that ultimate consumers that year took $96 billion worth of goods, of which $41 billion, or about 43 percent, went for distribution *activities*. This figure included the marketing expenses incurred by manufacturing firms, as well as the marketing activities of the distributive industries, i.e. wholesalers, retailers, transportation agencies and advertising agencies. The distributive industries themselves accounted for about 31.1 percent of the final value of all consumption goods, and a considerably smaller portion of the total final value of consumer services.[7]

Department of Agriculture

In addition to these three studies and many smaller scale attempts there has been the massive work of the U. S. Department of Agriculture in measuring what it calls "marketing margins" for agricultural products. Unfortunately for our purposes, the Department uses the word "marketing" to embrace almost everything that can happen to agricultural products once they leave the farm. It determines its so-called marketing margin for consumer food products by subtracting the farm value of raw foodstuffs and by-products from the final retail value of agricultural foods. This margin thus includes, for example, both the cost of grinding wheat into flour and the cost of baking bread. The procedure is somewhat analogous to saying that the cost of manufacturing Ford cars is part of the cost of marketing iron ore.[8]

The economists who prepare the USDA marketing margin reports are always extremely careful in explicitly stating just what is included in their figures, although the same cannot always be said for the people who use those figures in political debate. But the agricultural definition yields results which simply are not comparable to the marketing cost studies we have examined, however useful the Department's work may be for other purposes. In 1939, for example, the Department said that 63 percent of the consumer's farm food dollar was

absorbed by marketing costs, a slightly higher figure than has been reported for the last several years. Professors Beckman and Buzzell of Ohio State University reanalyzed the 1939 figures and found that just about one-third of the total 63 percent was the cost of processing prepared and semi-manufactured foods. The true marketing cost was about 41 percent, a figure much closer to those reported in the Barger and Cox studies for consumer goods in general.[9]

THE ACTUAL OUTPUT

But even the most accurate marketing cost figure is relatively meaningless until it is compared with the work performed by marketing. Much of that work, as we have noted, consists of intangibles that resist quantification, and so we do not have an output figure to set against the cost percentage. But it is an inescapable fact that a dynamic, high level economy involves a very considerable amount of marketing work. Even the Soviets, who have not been outspoken admirers of our marketing system, are beginning to pay us the compliment of imitation as their own economies emerge from the subsistence level. The western world is just beginning to notice such communist developments as a conference on advertising methods held in Prague in 1958, and attended by delegates from the Soviet Union, East Germany, Albania, Bulgaria, Poland, Czechoslovakia, Hungary, Rumania, Yugoslavia, China, Mongolia, North Korea and Vietnam.[10]

Dr. E. D. McGarry, of the University of Buffalo, has provided the best statement of what constitutes the actual output of marketing.[11] He lists six major functions of marketing which may be summarized as follows.

Six Functions of Marketing

- *The contactual function:* the searching out of buyers and sellers. This is a not inconsiderable task. A typical supermarket may carry five to six thousand items produced by hundreds of different processors.[12] One study of twelve representative drug stores found that each carried an average of 1,300 proprietary items (minerals, vitamins, patent medicines, etc.) alone, out of a selection of perhaps 20,000 or 30,000 such items produced for distribution through drug stores.[13] The American consumer draws upon a selection of literally tens, perhaps hundreds, of thousands of items. An elaborate and often unnoticed mechanism is needed to maintain contact between all of the people who use and produce both these items and their components, supplies and equipment.

- *The pricing function:* in our society, the principal device for allocating our supply of scarce resources.

- *The merchandising function:* the work of gathering information about consumer desires and translating it in to practicable product designs.

- *The propaganda function:* "the conditioning of the buyers or of the sellers to a favorable attitude toward the product or its sponsor." This is the most criticized of all the marketing functions. But probably few will dispute the need for some activity of this sort to support an economy in which consumption rises above sub-

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sistence and in which the advantages of scale are obtained through mass production in advance of sale.

- *Physical distribution:* the brute job of transporting and storing goods to create time and place utility.

- *The termination function:* something of a catch-all category, that includes both the process of reaching agreement in the case of fully negotiated transactions, and all of the contingent liabilities that remain with the seller after delivery takes place.

Since many of these functions are concerned with intangibles, facile evaluation of marketing performance seems unlikely, and perhaps impossible, even for the future. Probably room will always exist for debate concerning both the objectives of marketing and the means used to achieve these objectives. We may be certain that our present methods are not perfect. We may well anticipate the development of new and better techniques for the performance of many marketing tasks. Nevertheless, even though their work resists quantification, marketers need not apologize for their share of the consumer's dollar.

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1. The author wishes to acknowledge his debt to a former teacher, Professor Reavis Cox of the University of Pennsylvania, whose work and lectures have shaped many of the thoughts expressed herein.

2. *The Wealth of Nations* (Modern Library edition). New York: Random House, 1937, p. 499. Emphasis supplied.

3. *Ibid.*, p. 500.

4. Wroe Alderson, *Marketing Behavior and Executive Action.* Homewood, Illinois: Richard D. Irwin, Inc., 1957, p. 183.

5. See, for example, Pierre Martineau, *Motivation in Advertising,* Chap. XV, "A Store is More Than a Store." New York: McGraw-Hill Book Company, 1957, pp. 173-85.

6. An interesting classification of shoppers appears in Gregory P. Stone, "City Shoppers and Urban Identification," *American Journal of Sociology,* July 1954, pp. 36-45.

7. 1960 *Proceedings of the Business and Economics Section, ASA.* Washington: American Statistical Association, 1961, pp. 319-22.

8. The Department does usually make one reasonable but inconsistent adjustment in these figures. Consumer expenditures for restaurant meals are adjusted down to the retail store value of equivalent foodstuffs. The work of a restaurant chef is not treated as marketing, but the work of a cook in a frozen food plant is. In this connection though, it is only fair to say that increases in the sales of prepared food, the so-called "built-in maid services," fall short of explaining all of the recent changes in farm marketing and processing margins. Finally, we may note that in a recent unofficial study, two leading USDA economists added farmers' costs for machinery and purchased supplies into the total marketing margin reported for farm food products. Frederick V. Waugh and Kenneth E. Ogren, "An Interpretation of Changes in Agricultural Marketing Costs," *American Economic Review,* May 1961, pp. 213-27.

9. T. N. Beckman and R. D. Buzzell "What Is the Marketing Margin for Agricultural

Products?" *Journal of Marketing*, October 1955, pp. 166-68.

10. Lazlo Sonkodi, "Advertising in a Socialist Economy," *Cartel*, July 1959, pp. 78-79. Sonkodi's source is, interestingly enough, a publication called *Magyar Reklam*, i.e. *Hungarian Advertising*. For a discussion of other Russian marketing developments, see Marshall Goldman, "Marketing—A Lesson for Marx," *Harvard Business Review*, January-February 1960, pp. 79-86.

11. "Some Functions of Marketing Reconsidered," in Reavis Cox and Wroe Alderson, editors, *Theory in Marketing*. Chicago: Richard D. Irwin, Inc., 1950, pp. 263-79.

12. "The Dillon Study," *Progressive Grocer*, May 1960, p. D18.

13. Burley, Fisher and Cox, *Drug Store Operating Costs and Profits*. New York: McGraw-Hill Book Company, Inc., 1956, p. 263.

Horrors of the Eight-Hour Day (1865)

The advocates of the eight-hour movement are making an effort to have the working-day restricted to eight hours in all Government yards and workshops, which is a very good idea if Government can afford it, as it cannot until it has paid its debts. Nor has it a right to pay any of its employees more than the market price for a fair day's labor as long as the rest of the community is working to the utmost extent of its powers, in order to meet the heavy burden of taxation under which we are now laboring.* The day when it will be established as a precedent that the Government is authorized to pay men full wages for a short day's labor will witness the unsealing of a great fountain of corruption.

Editorial, "The Government and the Eight-Hour Movement," *The Nation*, I, 25 (December 21, 1865), 775. Abridged.

*Editor's note: $2,678 million, or less than 1 percent of the figure ninety-six years later. On a per capita basis, the 1865 national debt was $75, the 1961 one $1,592.

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ROBERT E. BROOKER

Long Range Planning

An analysis of techniques and achievable goals, with instances of successful planning activities

Long range, or long term, planning is a concept which requires analysis to insure that its meaning and value for business concerns is clearly defined. The phrase is frequently used quite loosely by economists, market researchers, analysts, and professional consultants just as the terms "automation" and "professional management" have been used without true analysis. I propose to define the kinds of planning that may be considered long term with illustrations drawn from companies whose background and history are well known, and then to describe the organization and background of the Whirlpool Corporation, and its long range planning activity.

Long range planning must go beyond forecasts of five or ten years, although such forecasts, along with short and medium term forecasts, have a considerable value and are necessary in the operation of a company. Forecasting has a secondary function in that it provides a criterion for a company to compare its market growth on a competitive basis, and also to appraise the growth of its industry market to determine whether or not the industry's growth is faster or slower than that of the national income or the per capita income. Where a company lags in growth in either of these two instances, there is a warning sign. If it should lag in the first respect, it clearly indicates that the company is losing out to its competition, and this suggests a change in sales policy or one of distribution. In the second instance, if its industry is growing at a slower rate than the economy and the industry is obtaining a decreasing portion of the country's spending power, then here is a situation where planning would suggest a change in the direction of the company. This example may suggest that short range planning will deal pri-

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marily with the existing activities of the company to capture a larger share of the market on a more profitable basis than its direct competitors, and that longer range planning will relate to the progress of the firm compared with the general economy. The function of management planning in an organization is to establish goals for all parts of the company, in terms of results to be accomplished, at the same time that it allocates physical, human, and financial resources throughout the company to attain these goals. In the case history of our own long range planning activities, it will be seen that in our consideration we directed our activity toward maximizing the return on investment on the capital employed in our business and utilizing the specializations we have in manpower, facilities, and systems of distribution.

ILLUSTRATIONS OF PLANNING

Douglas Aircraft Corporation

The first time that the term "long range planning" penetrated my consciousness was during the latter period of the Second World War. At that time, the Douglas Aircraft Corporation set up a long range planning function to study potential diversification for using facilities, management, and work force that had been greatly expanded for production of military aircraft. This long range planning task force explored many consumer durables, which they felt might be adapted to the facilities and skills of the Douglas organization. As it turned out, these plans came to nought with the tremendous post-war growth of commercial and private aviation. Douglas, whose commercial business had been concentrated largely in the DC-3, entered the market with a series of new products to meet this newly-created demand. This started with the DC-4, quickly changed to the DC-6 with several modifications of this ship, followed with the DC-7 with several modifications, and their latest work, the DC-8 Jet Liner, which, with other similar ships, has revolutionized long distance travel. I am sure the long range planning task force of Douglas, during the war period, was not in a position to anticipate the change in growth that would occur in the next ten, fifteen, or twenty years, and yet the management of the company had the ability to adjust itself to the change as technological advancement occurred and as the markets developed. It is interesting to note that aircraft manufacturers, as the result of missile programs, are again concentrating on long range planning.

General Motors Corporation

The largest industrial corporation in the United States has had an interesting growth pattern, and much of its planning resulted from the vision of individuals. Mr. Durant and Mr. Sloan, jointly, acquired the companies that now produce the General Motors line of automobiles—Chevrolet, Pontiac, Oldsmobile, Buick, and Cadillac. They acquired by acquisition the companies that have integrated into the manufacture of automobiles, beginning with Fisher Body and extending through Warner Electric, Delco, A. C. Sparkplug, Packard Electric, Rochester Products, a tubing company, transmission and other components. Now that General Motors has 50 percent of the total passenger car market and bigness

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may become a liability, the company has expanded its growth in other fields of land transportation, which has included its Electromotive Division, manufacturer of Diesel railroad engines, its Euclid Division, manufacturer of earth moving equipment and construction machinery, and its consumer durables, where the Frigidaire Division and Delco Division are factors in appliances and heating. The growth of the General Motors International Division, with its decision to establish manufacturing plants abroad rather than relying on exports, indicates the vision of the planners many years ago in this phase of their growth pattern. Trade releases indicate that the long range planners in this industry today are mindful of the potential of gasoline turbine driven cars and wheelless automobiles which would render engine, transmission, and frame facilities obsolete.

Sears, Roebuck and Company

The present long term planning of this firm is an outgrowth of many years' experience in the general merchandising business. In the 1920's, General Wood had the vision to recognize that the movement of people from farm to urban areas required that the mail order business be supplemented by a retail business and that the specialized talents of the buyer developed in mail order could apply equally effectively to the retail store system. The original stores followed the familiar location pattern in central areas with heavy foot traffic. Again, General Wood had the vision and courage to move retail stores out of the congested areas into locations that would serve automotive travel and provide large parking facilities. Once this pattern proved successful, it was then possible for Sears to set up a longer range planning program which was to determine its growth for many years to come. Its Market Research Department was able to determine population growth and movement trends and anticipate national income. Experience had taught Sears the percentage of each market that could be developed with decentralized locations handling a full line of general merchandise and related services, and with these being available on satisfactory credit terms. An analysis of the projected growth and income of the major markets in the country readily determined the retailing space requirements to fully cover the market.

The long range planning of distribution required provision for selling area, offices, warehouses, and parking. The cost of this expansion can be determined on a square foot basis. An additional requirement was retail fixturing and merchandising. This too can be related to the square footage required. Experience had shown that just as retail sales depend on a square foot basis, the capital required to finance the time payment accounts can also be anticipated based on the square footage requirement. Together with all factors related to the square footage of the selling area, the planners had to provide for facilities, merchandise, and money, and then a growth of organization to man these facilities. In addition, it was necessary to provide a back-up of sources to provide consistent merchandise values in volume to support the growing rate of sales.

This plan is well established in Sears, and the mechanics of providing the location, designing and erecting the

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buildings, while flexible, are usually planned four or five years in advance. Each annual report of this company indicates the growth in the number of retail units.

Other Companies

In this field, Penney's has had a similar program of long range planning and as a result their progress and growth are apparent. A contrast to this is Montgomery Ward where there was a long period of no growth and no planning, and it is only recently that this company has moved forward in a long range concept and, because the program is late, at considerable expense. These examples of planning long term growth in a few well known companies lead into the concept of planning that we have used in Whirlpool.

A PLANNING PROGRAM

The Whirlpool Corporation of today is the result of a merger made five years ago. Prior to 1955, Whirlpool Corporation manufactured laundry products only and distributed them through Sears, Roebuck and Co. under the Kenmore label and through its own distributors under the Whirlpool brand. The Seeger Corporation made refrigerators and freezers for Sears under the Coldspot brand, and the Estate Range Company made ranges which they sold through RCA distributors along with RCA air conditioners. Combining these companies into the present Whirlpool Corporation made us a manufacturer of a full line of major domestic appliances. In addition, we acquired the use of the RCA trademark and changed our name brand to RCA Whirlpool for major appliances. This line is distributed through distributors, the majority of whom handled the RCA line of electronic products — that is radio, television, etc. The sales volume of the companies being merged approached $400 million per year, and currently the company has sales of $450 million.

The Task Force

The first four years of this combined operation did not provide much time for planning. The problems of integrating the organization and bringing out an entirely new line of major appliances, under the full line concept, occupied every minute of the time of a very energetic and effective management team. A little more than a year ago, during a period when we were enjoying the most successful year since the merger, we paused to reflect on the longer range outlook for the company and decided that a planning program was timely and necessary. Both Mr. Gray, the Chairman, and I had been exposed to longer range planning functions of other companies where these functions had been separated from the top executive offices. We felt that planning functions tended to lose the dynamic qualities needed for change and leadership when it was assigned to a regular staff category. It was Mr. Gray's thought, and it proved to be a very good one, that we select from our organization a group of promising young men in various functions of the business, whose qualifications might indicate they would become the managers in the next ten years, and that they be given the assignment, with their regular duties, of working out a ten year plan for the growth and development of our company.

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Six men were selected and they became known as our Long Range Planning Task Force. They were given a year to make their study. There was no restriction on the amount of assignments given people within the company, providing time was available, nor the monies to be spent on outside consultants where such consultation was deemed necessary in specialized areas. The men were in an age bracket between 35 and 42 years, and their experience included manufacturing, engineering, sales, and finance. At the initial meeting, it was established that the plan would not go beyond specialization in major appliances and products functionally associated with major appliances, or such products as might come from our Research and Development, as were compatible with our general skills. This did not mean that our long range planning would not eventually go beyond this stage, but we felt there was ample opportunity within this specification to provide a growth pattern which was proper for our present operation.

Nature of the Study

The Long Range Planning Task Force organized itself with a Chairman and Secretary, who scheduled the meetings and kept a record of the discussions. Meetings were held bi-weekly, generally for a full day and on occasion for several days. The group divided their study into six phases:

- They determined their objectives.
- They arrived at a method of analyzing the problems.
- They went about securing the background information.
- They assigned specific projects to members of the group and, where necessary, enlisted support from inside talent or obtained outside consultation.
- They reviewed and discussed the findings on the individual projects and came to an agreement on the recommendations they would make.
- They summarized their work and made a report to the Chairman and the President.

Within the company, the Market Research Department was able to make what we hope will be accurate forecasts of the markets for major appliances for the next ten years. The family formation growth rate is available from a number of sources, the expected income per family rate is available. We in the appliance industry have a complete record of the saturation of each of our products, and we have fairly accurate records of the replacement rate, except as innovation and changes may accelerate replacement. This means that the Task Force, without providing for any innovation or change, could anticipate the overall market for appliances during the next ten years, and then determine whether the systems of distribution could increase our share of these markets, whether the share would merely be held even or whether there was some possibility of losing position in the market.

Invention and Rate of Change

The technical changes that might accelerate the rate of replacement have several effects on long range planning. If a manufacturer had a technical change that made all other products obsolete and he had this exclusively,

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he might increase his market share disproportionately. Experience has shown that this is an unlikely set of circumstances in the appliance industry.

The rate of change through innovation has been very slow. In the washing machine, there have been two major innovations in the last fifty years. One was the agitator principle of washing, which is fifty years old or older, and the second was the automatic washing machine, which is now approximately twenty-five years old. The acceptance of these changes was only accomplished as several manufacturers entered the field with a like principle. Many of the other improvements that have come along in laundry appliances are developed by one manufacturer, and where the innovation provides a real benefit to the consumer other manufacturers quickly follow, either through licensing or by copying the idea. The same is true of refrigerators. The major basic change in the refrigerator was the introduction of the hermetic sealed system, which came in the middle twenties. The dual temperature boxes, that is a refrigerator with a freezer compartment, were introduced in the thirties, but it is only within the last five years that the temperature in the freezer compartment of a dual temperature box has been held below 10°, which is the requirement for proper storage of frozen foods.

Aspects of Technical Development

There may be technical changes that would not only affect the consumer buying of a product but might also change the facilities required to produce the appliances. Ultrasonic washing is a subject that has been thoroughly explored, and it is now pretty well accepted that ultrasonic washing of clothing is not likely to revolutionize this industry, because a sound wave hitting a fabric suspended in a liquid is not meeting a solid object, and, therefore, is not as effective as a sound wave against metal parts where the principle is well established in commercial practice. Ultrasonic washing may be practical in the dishwashing field where china, glassware, and silverware provide a solid object to bounce the sound wave against.

Another area where technical development could bring about change is in the development of thermoelectric heating and cooling. It is quite probable that the day will arrive when we can economically cool thermoelectrically by the simple transfer of electricity into cooling without going through the process of using a compressor, evaporator, and condenser as now used in refrigerator systems. When this day arrives, the facilities required for refrigerators, freezers, air conditioners, and like products may be greatly changed. Our own work in thermoelectrics is well advanced and we estimate that such a contingency might be outside of the ten year scope of this plan.

Obviously, developments of this type must be reviewed currently and plans be flexible enough to anticipate such change. Today's mass production of durable goods requires substantial lead time for product change. The development, tooling, and testing of a new product require long periods. Time is required to provide the capital equipment, most of which is tailored for automatic or semi-automatic production. This means that companies must today take action which commits man-

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power and resources for longer periods of time. Long range planning must provide this, avoiding the prospect of having to maintain a partially idle labor force free of write-off obsolescent plans and equipment.

THE DISTRIBUTIONAL STUDY

Once the Task Force got into the assignment of projects, they found that the critical area for growth within this ten year period would be the problem of appliance distribution. The growth of distribution through our brands manufactured for the mass distributional arm of our system was related to its growth of facility, the expansion of its service, our ability to supply value in the product and a serviceability that would encourage the replacement of each of the Coldspot and Kenmore products in the field by a new Coldspot and Kenmore, and through this reputation of service and dependability bring new customers to these products. The Sears system of distribution is well refined to eliminate elements of handling costs, and passes these savings along to the consumer. This does not mean that further refinements are not available in the distribution of the products through Sears, but the opportunity for taking costs out of their distribution method is far less than opportunities available to the distributor-dealer system.

The Task Force found that the whole system of independent distribution should be carefully reviewed and for this purpose employed an outside consultant to work with our own Market Research Department. This work resulted in an economic forecast of the geographical distribution of sales that could be achieved by 1970. They then set up a mathematical model of distributional facilities to serve independent dealers most economically with this geographical distribution of sales. Currently, we distribute through 78 distributors located to serve roughly 10,000 dealers. The distributional pattern is a familiar one. The goods are manufactured and warehoused in the manufacturing location and drawn out in carload lots by the distributor where they are again warehoused. They are ultimately shipped to the dealer and he makes the sale and installation to the consumer.

The Gateway System

The distribution study was directed to eliminate some of this handling and the related expenses. A further objective was to bring complete stocks closer to the consumer. The study developed a regional system of warehouses, which we chose to call gateway warehouses. These warehouses might ultimately replace the stock at the manufacturer's plant and the stock at the distributor's establishment so that goods would be shipped off the ends of the manufacturing lines into a gateway warehouse, and then as sold delivered to the consumer; or they would follow the present pattern to a dealer and then be delivered to the consumer.

The gateways have the advantage of bringing the factory inventory closer to the consumer, and this provides for mixing shipments of all appliances when shipment is made to the dealer. Carload freight rates are available to ultimate destinations even though the shipment is interrupted at the gateway for storage. This proposal would eliminate inventories at distributorships but would increase factory-owned in-

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ventories since these would be held in gateway warehouses. Our study showed that fewer gateway warehouses would meet our distribution needs and provide delivery no later than the second day. The gateway system also provides a means of leveling factory manpower and securing maximum production economies.

Oher Recommendations

Our Task Force, recognizing the potential in the international field, authorized an extensive study of product market practices and competition in several countries. This developed a recommendation to participate in these markets and suggested priority for certain areas.

The Task Force also considered some of the other products that have already been developed from research such as the coin-op dry cleaning machine, which is being introduced this year and icemakers, which are being introduced both in refrigerators and as separate appliances.

REORGANIZATION

Once these parts were set into an overall recommendation, the need for study of the organization became apparent. When a company has grown big, it tends to become inflexible and is slow to change because of its structure and routine. Long range planning should have the objectivity to cut across established functions and procedures, to stimulate a change in direction and where necessary suggest changes of policy, procedure, and methods. The task force recommended a reorganization of manufacturing, a reorganization of distribution that developed from their study, a reorganization of the customer service and quality assurance development to complement distribution, and a reorganization of the International Division.

The recommendations all appeared valid; it was then necessary to determine whether earnings would provide the financial growth necessary to support this expansion. The net result of the financial study indicated that it was possible to substantially increase our business within 10 years, provide for additional facilities to support this added volume, and provide for the international expansion, if we are able to realize an 8 to 10 percent profit on sales during the period and retain 50 percent of the total earnings, or, if we confine our dividends to 50 percent of earnings. Experience has proven that we are able to earn 8 to 10 percent on sales over long periods, and we have followed a policy of limiting our dividends to 50 percent of earnings. The increase of our potential sales is in line with our present market penetration and somewhat below our rate of growth in the market.

Implementing Change

The Task Force at the conclusion of their study made their presentation to Mr. Gray and me. We have accepted many of their recommendations and are in the process of putting them into effect. The reorganization of manufacturing into product groups has been accomplished. The distribution recommendation for regional warehouses is under way through a pilot operation. The international recommendations are being explored and may be followed presently much along the lines of the long range recommendations.

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The customer service and quality assurance function has been reorganized to achieve the objectives recommended by the Task Force.

Top management planning has the responsibility for initiating change of the total company system, moving forward as a coordinated whole, in an evolutionary sense in response to changes in environment in which the company must survive and grow. The Long Range Task Force recommended that we establish long range planning as a permanent function. We have not accepted this recommendation yet as we would like to hold the long range planning responsibility as one belonging to the two top officers. We have arranged to meet with the original Task Force after the first year of operation under their recommendations and let them discuss the accomplishments and any new recommendations that may have come to them in their day-to-day work.

Development of Leadership

It is interesting that of the six men who made up the Task Force, four have been promoted to officers, a fifth has been made a Division Manager, and a sixth is Assistant to the President. We feel that our selection of men to do this work was well justified by their performance, and we look to these men to play an important part in the future of our company. This does not exclude other men who are demonstrating ability as they have equal opportunity, but, obviously, these six have had a great broadening of their outlook on all phases of activity, and they have been given opportunity to demonstrate their qualities of leadership. In many ways our long range planning activities fall into a category of intermediate planning with the only breakthroughs being in the area of distribution and international.

The execution of this program will require the doubling of our management force. Currently, we have slightly more than 2,000 men in a management category to carry out these objectives which will require more than 4,000. At the conclusion of this review, we took our long range planning to the entire management group to point out not only the opportunity for growth in the company and the opportunity for the individual, but also the requirement that the individual management men develop people to carry this additional load.

At the time of the merger five years ago, we made a five year plan of what we expected to accomplish. A review of this plan shows that we have substantially accomplished all objectives; although, quite frankly, they were not all achieved on the scheduled dates. We think our ten year program is one that is an attainable objective, but, here again, we recognize that progress will not follow a straight line. There will be some periods when we make more progress than in others; the essential thing is to have an objective, to be moving forward, and to have everyone in the organization recognize the goal.

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MALCOLM P. FERGUSON

The Corporation as Supplier To the Government

Knowing how to do business effectively, successfully and profitably with government can provide not only a great challenge, but a great opportunity.

There are opportunities, challenges, peculiar problems and responsibilities connected with doing business with the government: these aspects are more often referred to obliquely than discussed openly. The Bendix Corporation, with which I am associated, is quite familiar with them, for last year 67 percent of our volume was "subject to renegotiation," a description which is one way of distinguishing government from non-government business. A vast proportion of this is military or defense business, but there is much that is not of a military nature, such as that with the Weather Bureau, the Federal Aviation Agency and the National Security Agency. I shall discuss both categories.

When the Bendix Corporation was formed in 1929, its business was only 8 percent aircraft and the balance automotive. Yet the founders were even then so impressed with the future of aviation that our original name was the Bendix Aviation Corporation. Lindbergh's famous flight non-stop to Paris in 33½ hours was still captivating the imagination of those who dreamed about the future of aviation. The original concept of our corporation was to become a major source of precision components of a highly functional nature, involving growing technology. Among these items were ignition, carburetors, instruments, and electrical equipment.

The 1930's were a period of intensive development, largely on our own funds. I will mention just two of these developments: the pressure carburetor, which completely sealed the fuel system and permitted aircraft to roll, fly upside down, and carry out fighting maneuvers without spewing gasoline all over the engine; and the radio compass, which gave positive and safe flight direction to aircraft.

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The Roller-Coaster Ride

Being a military contractor has been like riding on a roller coaster since 1939. Bendix is one of the few companies which felt the impact of the war in Europe in terms of a substantial early build-up of production—before Pearl Harbor. This stemmed largely from the many new developments of the 1930's, of which I have mentioned only two. What happened then still staggers the imagination. Bendix went from a gross of $40 million in 1940 to over $900 million in 1944.

Then at the dawn after V-J Day, we felt the crash of a billion dollars of orders cancelled in a single week. The re-forming of our corporation in 1946 was one of the most difficult assignments that any company ever faced: from 77,000 people to 18,000 and from $900 million of output to $100 million.

At the time few were interested in military airplanes or components for them. The world was at peace, and war and defense were things of the past. In fact, the industry reached such a low ebb in this hard-to-believe period of indifference to defensive strength that it was almost extinguished.

Fortunately, the Finletter Commission and a joint Congressional board studied the problem and came up with recommendations that were adopted and implemented. Only by this close call were we able to be prepared for the Russian and Chinese threats of the 1950's and the Korean conflict in 1951. As everyone knows, the emerging reality of the Communist threat prevented another such let-down.

The Korean action, of course, brought another roller coaster climb for military contractors and for us. Our gradual growth, from the $100 million of 1946 to $215 million output in 1950, again zoomed to $635 million in 1953.

Technology and the Contractor

During this period from 1945 to 1958 there was another and still more challenging problem for the government or military contractor: the rapidly changing technology. It is probably best displayed in terms of engine horse power. Our largest engine at the end of World War II developed 3,700 HP. The first jet turbine engines were just being developed in this country. By 1958 the reciprocating engine, used since the advent of flight, had almost disappeared and turbine jet engines of 25,000 HP were available. Speeds had gone from under 400 miles per hour to 1,500 miles per hour and the sonic barrier had been broken by the Bell XS-1 as early as 1947.

Another revolution in power plants had also occurred almost simultaneously: the development of liquid and solid propellant engines of simply astronomical power. We are now using engines with 300,000 pounds of thrust and one is under development with 1,500,000 pounds of thrust, equivalent to about the same horse-power rating at certain altitudes. At the same time the shift from aircraft to missiles was creating major changes in every segment of the large aircraft industry, bringing with it a trend to automatic control of almost everything and the use of electronics with its millionth-of-a-second action and response potential.

I could not begin to relate how these accelerating changes rendered obsolete factories, equipment, methods of pro-

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duction, and even the thinking of people. But for the already groggy defense contractor with a technology revolution besetting him at every point, more was yet to come as Sputnik was launched in late 1958 and the space race began. For the military and government contractor of major items, it can appropriately be said that his role has not been a simple one, with technology racing ahead at a rate which strains conventional methods of business management, corporate planning, and performance.

THE GOVERNMENT AS PURCHASER AND USER

Before itemizing some of the main areas of doing business with the government—both problems and opportunities—I would like to emphasize how important the government has become as a purchaser. Passing over the military for the moment, there is the Federal Aviation Administration, deeply involved in the development, testing, procurement and operation of aviation traffic control, communications, airports and their equipment, international standards, and most importantly, safety. They have their own large development and testing center at Atlantic City, New Jersey, and are spending over $100 million per year on development programs with industry. We are among the contractors trying to find answers to the problems of communications regardless of weather or radio interference, safe separate roadways in the air at dense terminal areas like New York and Washington, improved and simplified instrument display to ease the pilot's burden, and automatic touchdown landing in any weather.

Weather Services

There is the expansion of government weather services involving continuous forecasting and visual presentation of the weather, no longer just domestic, but world wide. Here the potentials of space observation are tremendous.

Oceans

Then there is that vast area of the oceans where the employment of sonar equipment to determine and plot depth, for such uses as geodetic survey, has been going on for a long time. We are now interested in the mineral potential not only of the water, but also of the floor of the ocean. We are challenged by the problem of detection and communication through water. Government will certainly lead the way in meeting our fresh water scarcity through desalting of sea water on an enormous scale.

Education

Whether all of us like it or not, we are on the threshold of what will probably be a period of investment by government at all levels in education. This will involve many aids to education: TV, electronic translation from one language to another, and speech and reading aids.

Research and Development

Then there is the market represented by the tremendous expansion of government facilities in support of research and development—not only military but non-military projects and programs. While government arsenals

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have existed for some time, the success of the government-sponsored program on atomic energy and the support of new areas of research and development, even during the war, at many universities and institutes, created a background for an enlarged and growing program of government support of research and development.

Certain of the trends of modern technology lend themselves to original government sponsorship, and, in the military area in particular, we now see large research facilities owned and operated by the government and frequently having civilian or university ties, such as the Rand Corporation, the Aerospace Corporation of Los Angeles, working with ballistic missiles, the new Mitre organization in Boston, concerned with electronics, and the Lincoln Laboratories under the direction of the Massachusetts Institute of Technology.

THE POTENTIALS OF GOVERNMENT BUSINESS

All in all, it has become an important function of business management to examine the potentials represented by government business. Sometimes it is hard to realize how tremendous this potential is and can be. For example, there are only 40 companies in the United States which did more than a $1 billion business in 1959. Yet now there are projects coming up monthly in the government area which are price-tagged at $1 billion and more.

Within the limits of this article, I can but outline the character of such business and mention a few of the daily occurrences and experiences associated with functions such as research and development, procurement, contract negotiation and rules of the game.

I would like to make this further distinction: we talk loosely about space procurement as if it were military, and much of it is. But as I hope, along with so many others, that disarmament may sooner or later lighten our burdens, I also believe deeply that our investment as a nation in space technology will be on the ascendancy throughout the lifetime of the present generation. I am sure it is clear that Russian technology, and perhaps Chinese technology, will be waging a continual battle with us and a battle in areas where government must compete, as well as companies. It is this situation which I think will to some extent replace and certainly succeed the arms race, if and when effective measures for disarmament can be relied upon. There are some who now predict that government and military expenditures for space projects will grow from $1.5 billion at present to $8 billion by 1970 and *exceed* aircraft and missile expenditures combined.

Characteristics

There are certain striking differences between doing business with the government and doing commercial business.

Scrutiny. It is a fact of life that government employees — elected, appointed or Civil Service—are in Macy's window. How they conduct the public's business is subject to continual scrutiny, by the press and by Congress and by well-wishers of all kinds. So inevitably there is a tendency toward building a record of justification, in the unhappy event that somebody later

wishes to criticize. It is also characteristic of government to have evaluators evaluating evaluators. These activities try your patience, but they are a part of our political system. Allow plenty of file space in your office, for while the contract itself may be forty pages, amendments as to changes in terms, prices, production and delivery can fill a whole file drawer. Lawyers and contract negotiators are necessities.

Investigation and survey. In a very real sense the government does not trust its suppliers as commercial customers do. They even suspect your proposal or bid and there is a recent requirement for a certification that your cost data and the formula used in making your proposal are honest and factual, and that you have employed no commission agent. Management must sign this. Once a contract is let, the investigation begins, whereas a commercial customer expects the supplier to perform properly and to make good his mistakes, if any. Your facilities will likely be investigated before you get the contract—your past record will certainly be re-evaluated. You will have supervision or investigation during the contract by contract people, quality personnel, purchase analysis people, small business representatives, and eventually contract auditors and the General Accounting Office.

A fluid situation. Perhaps it is because of the tempo of government and a tendency toward perfectionism that in government business one never seems to be dealing with really frozen designs and specifications. Of course rapid changes in technology and pioneering new military concepts play an important part. The civilian customer, on the other hand, decides what is good for the particular run and kicks it loose: he will make his changes in the next model. In government contracting, one must be organized to promptly and effectively meet the changes in design and specification in every department of his business.

Political pressures. These are frequently considerable. Occasionally a powerful political figure will endeavor to help a local industry with its *commercial* opportunities; but this is seldom compared to the interest political people take in who gets what in government business, and under what conditions. Competitive contracts are decided on qualification and price, but negotiated contracts are usually evaluated on management, technical merit and appraisal, quality, logistics, presentation, and price. It is here that political pressures may have influence in such matters as small-business philosophies, favored states, and depressed-area problems.

Cost disallowances. This whole area in doing business with the government is a sobering subject. Few people realize that many obligations of the corporation in its discharge of its social and corporate responsibilities—Community Chests, aids to education, even forms of advertising—are disallowed as a cost factor in government contracts. We are now operating under a new regulation limiting the amount of forward research and development allowed as cost. Even though this research is intended to improve the present product, its cost may not be included in the engineering

operating overhead charged to government contracts. This fact has many contractors studying just how much research, development, and product improvement expense they can absorb against profit. Most discouraging to contractors is the regulation that the interest paid on bank loans entered into to finance all phases of one's business is disallowed as an item of cost. For a company like Bendix with $55 million of borrowings, an interest bill of $2.5 million a year is quite a cost disallowance.

Profit negotiation and renegotiation. Of diabolic importance is the difference between the two kinds of business when it comes to averaging profitable and loss contracts. In the civilian area, the company is accustomed to make up on potatoes what it loses on peas. This is difficult, if not impossible, in dealing with the government. Misfortunes which turn a promising government contract into a costly loss must be swallowed as such, and may not be recouped by higher profits on other contracts or by spreading this loss against future costs. However, in renegotiation of a military contractor's overall profits, the total business with the government is considered. Many in industry generally feel that renegotiation is no longer necessary or sound. They feel that after a contractor has been through a price and profit negotiation in taking the contract, has had this same contract subject to cost and profit review during its completion, has sometimes been rewarded or penalized by incentive contract clauses and has finally paid his normal 52 percent profits tax, further attempts to attack his profit by a special government agency are just too much. Decisions by the Renegotiation Board are frequently possible only two or three years after the management has closed its books for the year and reported to its stockholders.

Accounting systems and problems. In doing business with the government, the area of accounting, including bookkeeping, cost records, estimating and auditing are as important as the contract accomplishment itself — sometimes more so. Accounting procedures and policies must be approved ones, certainly in all cases other than straight fixed-price competitive contracts. Cost estimates in great detail and even anticipated profit must accompany all negotiated and cost-plus-fixed-fee (called CPFF) bids. You must be prepared to explain and argue every price detail, with the support of experience figures, before the contract is signed. You must have an approved purchase procedure, an explanation for each item you make or buy (whether it should be made or purchased), and a constantly available cost record for audit and analysis as the contract proceeds. On cost-plus-fixed-fee contracts, you will probably be paid 80 percent of the contract as it is progressively shipped or finished, and the remaining 20 percent only when you have satisfactorily fulfilled all the terms of the contract—perhaps many months later. Your accounting system is the key to your economic survival.

Ambition and inexperience. Of real importance, too, is the degree to which government business is affected by both the ambitious and the inexperienced seeker for contracts. It is not unusual for companies to bid govern-

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ment contracts on a basis which they fear will mean little profit and sometimes even a loss. Why do they do this in government business? First, because of the rigidity of the accepted doctrine that the government must take the low bid and the great pressure this puts on a once-only sealed bid procedure. Secondly, because many hope that contract technical changes may later arise resulting in a new negotiation that can somehow improve the situation or that there may be a new repeat bid later, on which they might develop a profit after gaining experience on the first contract. The inexperienced bidder situation frequently arises because he does not realize the requirements, has not really studied the specifications, or underrates the precision or the testing required.

THE ADVANTAGES OF GOVERNMENT BUSINESS

After this recital, it may seem remarkable that we at Bendix and hundreds of others enjoy doing business with the government. There are many reasons, some of which I shall discuss.

Maintaining the Defense Team

I believe that corporations and their people are just as patriotic as private citizens. They feel a sense of responsibility to make our government programs succeed, to keep our country strong for its preservation for future generations. While many firms discontinued government business after their contribution to World War II, large numbers maintained their interest and even dedication to it because they felt it to be not only good for them, but likewise necessary that the industry-government defense team be maintained.

The Challenge of the Unknown

You are certainly on the frontier of technology when you are dealing with the government in this day and age. The whole missile and space area is at any given moment right on the rim of the unknown, so that corporations receive the stimulation they very much need by being active in this field. Where else would one be challenged by such a tremendous advancing technology as the changes from reciprocating to jet engines and from aircraft to missiles? And in the field of electronics, I recognize that it was the demands of the missile and now the space trend that have created the necessity for miniaturization and now sub-subminiaturization with all its accomplishments.

Profit

I would add a very substantial reason: money and orders. It is obvious that a $40 billion budget means business—big business.

Technical Contacts

To an increasing degree, working with the government on government research and development brings the corporation into contact with scientists, engineers and thinkers who can accelerate the progress of the corporation, and who would probably not be encountered in such great numbers if the company were not engaged in government business. It is readily apparent that such business affects the character of your personnel and con-

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stantly presses for greater and greater technical strength.

New Methods

Corporations that substantially engage in government projects find themselves being indoctrinated into new methods of long term planning—of evaluation and analysis beyond the present. At present, we are challenged by a new production control or project control plan the Navy calls Pert, which has been effectively used in accelerating and organizing the Polaris missile program.

Commercial Potentials

Another important reason for undertaking government research and development contracts, particularly, is that the goal is ever present—and often reached— of transmuting a government undertaking into a profitable commercial product or product line. This has more often been true in the aircraft business itself by applying a military product experience to one with commercial aviation potential — even complete aircraft. Certainly many electronic miniaturization developments of the missile age will have some application to commercial electronics. It takes a spy glass that I would very much like to own to determine what will be the case with space projects of the future. We have a most challenging R & D project for space communications called Advent. Will it become a commercial potential? Can it become a means of world communication and even TV transmission through multiple satellites? We don't really know now, but we do have hopes and visions.

Two such commercial transitions we have experienced might be mentioned. We obtained a contract to produce weather radar for military aircraft, and from it, a greatly modified unit was developed for commercial use and is today one of the important safety features of modern flight. It shows vividly to the pilot, on a cathode tube screen, turbulence, rain and hail 150 miles ahead, and by turning to a 20-mile range, he can easily steer around most storms. Faster aircraft demanded better brakes. A ceramic-type lining was developed to withstand the high heats which burned up any asbestos base material. It is now a substantial factor in the success we have had in increasing our commercial aircraft brake business.

Foreign Trade Potentials

Close contract relationship with our own government has its beneficial potentials in opening up opportunities with the defense and even commercial programs of other countries, by licenses there, by export of items produced here for aircraft and weapon systems used abroad, and by manufacture in foreign countries, as we are already doing in France and Germany. It opens up horizons, competence, and associations that otherwise might not exist.

DECISIONS AND RISKS

In the past, defense contractors have often been supported by government funds in obtaining large and costly facilities of both a production and research nature in order to permit them to carry out major contracts and projects. It must be recognized that these

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are generally of a character required only for such projects and they would not constitute a sound corporation investment of its own funds. At the same time, most contractors have risked large investments of their own funds to supplement these government-owned facilities. In the last few years, the responsibility for facilities has become more and more that of the contractor, and the risks many are taking today are truly enormous. Let me cite a current case on my desk.

We have several space projects at our Systems Division in Ann Arbor, and are bidding on more, including complete satellites. A space laboratory capable of simulating the vacuum, heat, and cold conditions of outer space is needed if one hopes to be successful in this business. An original expenditure of $1.5 million is necessary—more will follow. Should we spend our funds for it? Will we obtain the contracts to support it? If we don't, will we limit our space activities? Our answer at a recent Board of Directors' meeting was to go ahead, but we recognize the high risk.

The Weapon System

The period from 1955 to 1960 has brought a new concept to military development and procurement, called the Weapon System. I believe it had its origin in the missile as a weapon system, but as aircraft have become more and more complex (the B-58 bomber is an instance), the philosophy applies here also. When one thinks about the problems of an unmanned missile, including the ground launching equipment, the special liquid fuel engines and their loading, the guidance over a 5,000 mile trajectory, the terminal guidance and control, the tests which must be made to insure reliability of every circuit and part prior to countdown, and the special ground equipment required for checkout, the need for viewing it as a weapon system becomes quite obvious. In the case of the B-58 bomber with its Mach 2 speed, the controls necessary at the time of breaking the sound barrier, the fire control equipment involved, and the fact that man cannot think and act fast enough to perform all the control functions required, all combine to create a similar need for a weapon system approach.

Weapon system management is in some cases the responsibility of the contractor, and in others is handled by the military service involved. The weapon system concept and its larger potential and responsibility created problems for traditional components manufacturers, such as Bendix, Thompson Products, RCA, and most of the electronic companies. There was certainly the risk for many of them that the successful weapon system contractor would tend to do more of the research and development himself and integrate components into his own business to the maximum extent possible. Many aircraft companies organized electronic divisions. The component and electronic manufacturers were faced with the question: should they become bidders for complete missile or weapon systems and compete with those who had been their customers, or should they remain suppliers? There was some feeling in certain areas of the military that electronic manufacturers might be the most logical prime missile contractors,

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due to the fact that many of the missiles were more than 50 percent electronic in character. A similar situation existed among the power plant producers. Should the long time manufacturers of reciprocating and jet engines undertake the design, development and supply of liquid engines and solid propellant engines? In the case of Bendix, we had very early undertaken the development of one of the first missiles, the Bumblebee, but it was a difficult and challenging decision, which we made, to determine that we should continue as a missile contractor and vigorously compete for missile business. This situation has brought many changes from past tradition. Many new contractors have entered the defense business; new manufacturers of liquid and solid propellant engines have been formed. The aircraft manufacturers who were formerly customers have also become our suppliers; and for major weapon system bids, competing teams are frequently formed of an aircraft manufacturer, several electronic manufacturers, a ground launching equipment company, and others. So, today we find virtually everybody in everyone else's business when it comes to competing for defense contracts, although a substantial amount of specialization still remains.

Reliability

An element of this great change which warrants special mention is the increased requirement for electronics in the modern weapon system and its potential for weight reduction, automaticity, miniaturization, increased reliability and meeting new environmental requirements.

Reliability in particular is an outstanding requirement of this missile and space age. With a missile or space vehicle that may contain 15,000 electronic parts and cost $500,000, the failure of just one little $1 resistor can mean the loss of the whole missile. How to insure the satisfactory performance of each of these parts under the severe conditions of a launching operation and the environment of flight and space has been and still is one of our great challenges.

Precision

Another requirement of this advancing technology and automatic control is that of the precision and finish of mechanical parts, such as those making up gyro mechanisms and hydraulic valves, pumps and controls. It is now necessary to measure many parts to an accuracy of one millionth of an inch. At its Sheffield division, Bendix specializes in producing intricate gage and measurement equipment, and it is now possible to produce parts to actually make measurements of a millionth of an inch. Important to measurement of intricate parts is also the cleaning of them, and here the new science of ultrasonics has been put to work in a major way by utilizing ultrasonic cleaning and washing machines such as one produced by our Pioneer-Central Division.

Bidding Problems

Major systems and sub-systems have presented new problems and challenges to the bidder. Let me briefly cover what he does. If he qualifies as a potential bidder, he is invited to a briefing by the military, where per-

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haps five to ten of his people will go for one to two days. He then may have a month to study the requirements and specifications, to formulate his solutions, and prepare a bid. The bid has to be printed because sometimes as many as 30 copies are needed for the military. These bids frequently involve several books, one perhaps dealing with a management presentation, another a technical submission, a third the pricing, a fourth a plan on how reliability is to be assured, and perhaps others. After this bid is presented on its due date, a long evaluation is undertaken by the military. The contractor tries to make certain that his bid is properly understood and that everything possible is done to create a favorable reception and win the award. Such a program may take the best technical talent a contractor has, for a period of six to ten weeks. You can imagine how this can affect other work. Management is frequently involved right up to the president. There may be as many as 30 competing contractors, each one spending from $50,000 to as high as $250,000, on some of the more complicated bids, with no certain recovery of this expenditure whether he wins or loses. Of course, if he wins, he would hope that the profit on the contract would more than compensate for his effort; but if he loses, he just has to try harder for the next one.

On some of the research and development bids, a contractor is willing to bid a price well below his cost, because he feels he may benefit by having won the research and development contract, or that it may lead to a more favorable later contract. I remember one case where we were bidding on a new radio device, this having been a major product with us. Our bid for the research and development contract was $300,000, but we estimated the cost at $500,000. A competing contractor was so anxious to engage in this business that he bid $1 and won the award. I can recall another case where we were bidding a production contract for 40,000 radiosondes—electronic airborne radio sets used in weather forecasting. We won the bid by one-half a cent difference in price on an approximately $18 article. It is easy to imagine the problems that arise when a bidder does not fully evaluate the specifications or underrates the engineering or manufacturing problems involved in fulfilling the contract.

COST REDUCTION

I would overlook a major activity in current government contracting if I did not refer to the intensive drive and the joint effort of the military services and contractors to reduce costs and obtain more for the defense dollar. General Mark Bradley of the Air Force will soon report to Congress on the results of recent cost reduction campaigns, which will show cost savings of over $500 million. These result from many activities, including better administered and more competitive buying. Incidentally, our Bendix purchase people try to get a minimum of three bids on every procurement. Value engineering is a new and widely used tool. It works like this. A group of engineering and factory personnel, including methods and procurement people, form a team to critically review each part of an assembly and ponder questions such as: must it have these machine tolerances? Can it be made of less costly material? Can the spe-

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cification be altered for cost? Can a similar part already in production be used? Can the process of manufacture be more automatic? And they even say to each other, "Is the part necessary at all?"

Other Value Engineering Programs

The Navy and Army are carrying on similar programs. On one Navy-type gyro, one of our divisions had a recent outstanding example of what value engineering can do. A team of six people —three who knew gyros and three who didn't—spent parts of days for two weeks on such a cost reduction program. The result: A change in design and simplification that lowered the price from $2,200 to $1,600.

Electronics Applied to Manufacturing

A new development using electronics and computers applied to machine tools, called numerical tape control, has tremendous potential in reducing manufacturing costs and is being accelerated by the Air Force support in buying new machine tools so equipped. Our company has been active since 1950 in developing this type of equipment.

By using a computer mechanism, the design called for by the blueprint is put on a tape. The tape is played back through a computer mechanism to actuate the cutters on the machine automatically, and the part is produced more easily, simply, and cheaply, and with much less costly tooling.

THE HUMAN FACTORS

The rapidly changing technology has had its effect on people, as well as on contracts and facilities. The need for people trained in such fields as electronics, miniaturization, and solid state physics, rather than mechanics and simple hydraulics, is a major change. This has challenged the capabilities of engineers in particular, and not infrequently business finds itself with excellent mechanically trained engineers at the height of their career, but not trained for the new technology. We are trying to improve this situation by educational assistance programs and by stimulating our older technical personnel to undertake advanced courses. On top of this existing situation are the new frontiers of space with its demands for still newer technologies, concepts, and solutions, even involving whole new areas of human factor problems, such as faced by the astronauts of the Mercury project.

Security

In military contracting, security control is essential, covering such matters as protection of classified information, controlled access to factory operations, and limits on publicity. You may hire a man for a job, but you cannot put him to work on it until he is properly cleared by our FBI or by military investigation; it may take four to eight weeks. The question is, what do you do with him meanwhile? I recently finished our annual report for 1960, but it was necessary to delay printing for almost two weeks while proper parties in the Army, Navy and Air Force reviewed it for any possible security error. Training your people in habits of security outside the office is a constant challenge. One phase of our military work deals with maintenance or support contracts where we have trained engineers and service people

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stationed all over the world, some 1,300 of them, generally located at military spots and responsible for seeing that our radars at Thule or our communications on bombers in Japan are constantly in working order. The same applies to our manning of three satellite tracking systems, each with tracking and communication stations around the world. These are called Minitrack, Spasur and Mercury.

Let me tell you of a recent security situation here. One of our Mercury men was assigned to Australia. As he got off the plane, the press besieged him with questions about the Mercury project, and what he was doing. The next morning we were startled to read in most United States papers a dispatch from Australia about a Bendix scientist who told this and that about our "man in space" program. Of course, our executives were on the pan quickly. After days of burning wires and cables, the man's supported statement that he didn't say such things altered the case and relieved the security pressure, but it was a bad few days.

REGULATIONS

Anyone in management who is dealing with the government must be prepared today to familiarize himself with a great volume of procurement regulations. The basic Department of Defense document is called ASPR, or Armed Services Procurement Regulations. ASPR, the bible in contracting work, consists of 17 detailed sections covering the regulations on procurement by formal advertising versus procurement by negotiation, contract clauses, termination of contracts, taxes, and numerous other matters. In addition, it is implemented by separate procurement procedure manuals issued by the Army, Navy, and Air Force. Such agencies as the Atomic Energy Commission and the National Aeronautics and Space Administration also have their own procurement manuals. Failure to comply with any of these regulations because of ignorance can be very costly to a contractor and embarrassing to the management people responsible.

Many of these regulations are incorporated in prime contracts and then in turn are incorporated by reference in purchase orders issued to suppliers all the way down the contractual chain.

The clerical effort required to disseminate the applicable regulations and their modifications to all affected in their own areas of responsibility is in itself a tremendous job. It must always be remembered that these regulations are constantly being supplemented and amended by important revisions. Management must necessarily be prepared to devote a great deal of time to the study of applicable regulations and to insure compliance at all levels of its operations.

Patents and Proprietary Rights

Another subject requiring constant attention by management has to do with the regulations relative to patents, proprietary rights and technical data. This field embraces regulations as to what are "proprietary data," the distinctions between proprietary and non-proprietary data, regulations as to reproduction rights, protection of technical data, and a number of complicated rules with respect to "limited rights" and "unlimited rights" in data. Since the life blood of a company today may depend upon its proprietary rights

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position, I do not have to stress the vital importance to management of knowing exactly where the contractor stands with respect to proprietary rights.

IN PERSPECTIVE

A few words in conclusion. As one looks back over these fifteen years and particularly the last five years, and even forecasts that the rate of change will only be maintained and not further accelerated, it is almost impossible to envision the effect on our lives and our small world. It is my opinion that government will play a more important role in technology, the conquest of space, world, and even planetary communications and transportation. Knowing how to do business effectively, successfully and profitably with government can be not only a great challenge, but a great opportunity.

"To Call Down Knowledge . . ."

It is indeed one of the peculiar and great undertakings of the age, to communicate scientific knowledge to the whole intelligent portion of the mass of society. The energies of the social world, aroused, as they never were before, to the work of the general improvement, are now directed particularly to this object. . . . The noble project of bringing down high philosophy and holy science to the mass of the people, has been reserved for this age. It is a novel enterprise among mankind. It is an unwritten page in the history of the world. It is a project, we do not think it too much to say, which never before entered into the conceptions of men; for it is an attempt to pluck from the sun, in the highest heaven of philosophy, the Promethean fire, to burn on the common hearthstone in the humblest abodes of mortals.

The error of past ages has been, to accumulate power, wealth, learning and even religious responsibilities and trusts, in a few hands. Monopolies have not been confined to property; they have extended to knowledge too. . . . The paths of the scholar have led far away from the beaten track of common life. . . . But it is the strong tendency of all liberal thought and feeling, at *this* day, to bring every human acquisition to a practical account: . . . to call down knowledge, from its proud and inaccessible heights, to be the companion and cheerer of the lowliest toil and the humblest fireside. *Diffusion* is the watchword of the age, and unless the spread of intelligence keeps pace with that of power, of wealth, and of religious liberty, it will become the motto of universal disappointment and defeat.

"Diffusion of Knowledge," *North American Review*, LXVII (April 1830), 293-313. Abridged.

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LAWRENCE M. SOMMERS

U.S. Business Ventures in The Netherlands

- *Their nature*
- *Their extent*
- *Their prospects*

Europe has experienced a major post World War II surge in economic development. Since 1948, the industrial production of Europe west of the Iron Curtain increased from a little more than 50 percent that of the United States to 75 percent in 1957.[1] Various United States aid programs, especially the Marshall Plan, totaling more than $50 billion in the postwar period, have been an important stimulus to this growth. Direct investment (new capital and reinvested profits) by United States private industry has been small in comparison, reaching a little over $5 billion at the beginning of 1960, but it is rapidly gaining momentum. Most of the American investment had previously been in the United Kingdom, but since the formation of the Common Market (West Germany, France, Italy, and Benelux) in January 1958, a greater proportion is flowing into these countries (Table 1). A total of about $2.2 billion or 40 percent of the United States capital has been invested in the Common Market countries since 1948.

The regional economic and trade groupings of nations, such as the Common Market, has markedly increased the interest of the American businessman in European ventures. The lower labor costs in most European countries and the large mass market created by the Common Market offer advantages to United States industry. Modern technological development, the amount or speed of capital investment, and the larger postwar purchasing power of the average European, especially for consumer goods, have had a real impact upon the rapidity of European industrial growth. In order to compete in this important market, many United States concerns feel they must set up operations within the Common Market countries. They will then be able to take advantage of expected benefits

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TABLE 1

NEW U. S. OPERATIONS IN WESTERN EUROPE, 1958-60
(In millions of dollars)

	Nether-lands	Belgium	France	West Germany	Italy	U. K.	Other	Total
Manufacturing								
Machinery and metalworking	31	35	63	55	56	47	26	313
Chemicals and drugs	20	23	21	10	22	10	9	115
Other manufacturing	11	13	17	21	12	11	8	93
Petroleum	2	3	10	1	10	—	2	28
Services	5	3	4	9	7	7	6	41
Total (including services)	69	77	115	96	107	75	51	590

SOURCE: *Report on Western Europe*, No. 10, Oct.-Nov., 1960, The Chase Manhattan Bank.

such as the lowering of tariffs between the member countries and the equalization of tariff against outside products. They will be subject to the same laws as local companies and in general profit from producing on the spot in Europe.

Importance of the Common Market

The six Common Market countries contain 170 million inhabitants in all, 85 million of them active working people. They produce 60 million tons of steel, 230 million tons of coal, 46 million tons of grain and many other raw materials and manufactured goods. Their gross national product is about $210 billion and they possess a combined purchasing power equivalent to half that of the United States. The Common Market, with its economic and political implications, undoubtedly will have a major impact on the economic geography of Europe. Such major industrial concentrations as the Ruhr, northern France, the Po Valley and Benelux give every indication of continued economic growth. They are connected by well developed water and land transportation systems. About a third of the trade of the Common Market area is with member countries. The Netherlands has been selected as a case study to illustrate the nature, distribution, and significance of United States investment in a European country. Within a radius of 200 miles from the Netherlands, the heart of the economic core region of Europe including southeastern England, is found nearly three-fourths of Europe's manufacturing and commerce.

Holland in the European Economy

The Dutch lack many of the natural resources for industrialization within their own country. The independence of Indonesia has cut off the flow of raw materials to Holland from this source. Minerals produced are coal (12 million tons or nearly half of their needs), 1

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million tons of crude petroleum (about a third of domestic consumption), and 585,000 tons of salt annually (much of it for export). The products of intensive agriculture and horticulture are processed largely for export. The leading industries include shipbuilding, metal refining, textiles, chemicals, and leather goods. The industrial production growth has averaged over 7 percent per year during the 1951-59 period. This industrialization has helped solve the problem of the most rapidly growing population in Western Europe. Capital is vital to such a developing economy not only for industry but also for land reclamation, port expansion, and development of transportation facilities. Foreign capital is welcomed.

The Dutch have been traditionally heavily dependent upon agriculture, transportation, and commerce to support their economy, but manufacturing (industrialization) has been rapidly increasing. About 33 percent of the labor force was employed in industry (manufacturing, mining, and construction) in 1947 and 42 percent in 1958. Those employed in commerce, transport, and banking increased from 24 to 33 percent in the same period, while those in agriculture decreased from 20 to 12 percent. The Netherlands has a population of 11.4 million, a labor force of 4.5 million, and the highest average population density in Europe, 885 people per square mile. There are vast differences in this small country between the urban, densely populated, industrial and commercial west coast, the productive agricultural interior, and the unproductive sandy heaths towards the east. The three cities of Amsterdam, Rotterdam, and The Hague contain a large proportion of the population and the economic activity of the country.

The Netherlands is centrally located at the hub of the major industrial and commercial region of Western Europe. Its position on the North Sea at the mouth of the Rhine gives it easy access to the productive West German hinterlands as well as tidewater transportation to all parts of the world. The Dutch have a merchant marine of 4.7 million tons, ranking 7th in the world, and own a large percentage of the barges on the Rhine. The country's location and the ingenuity, skill, and commercial know-how of its people have been their major strengths in the European economic scene.

U. S. INDUSTRY IN HOLLAND

The reasons for the importance of Holland in Europe are also attractions for U. S. investment. Among them are a rapid industrialization, skilled labor, low wage rates (the lowest in the Common Market nations), excellent transportation facilities, a developing market in both the Netherlands and the Common Market, and a desirable investment climate. Concessions are given, such as tax-free accelerated depreciation on ⅓ of the original investment and a 4 percent yearly deduction on added buildings and equipment.[2] One factory in the Netherlands can now serve the whole Common Market area, as the tariff regulations will be the same whether the firm is in Italy or the Netherlands. The United States investment of $20 per capita in Holland was the highest in Europe in 1958 with the exception of the United Kingdom. About 70 new American operations were begun in Holland between 1958 and 1960, and the investment now to-

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TABLE 2

AMERICAN OR RELATED DUTCH FIRMS IN THE NETHERLANDS, BY NUMBER AND TYPE (ACCORDING TO U. S. STANDARD INDUSTRIAL CLASSIFICATION)

	No. of Major Groups	Total No.	Percent of Total
Manufacuring	17	169	61.8
Services	3	39	14.2
Imports and/or Exports	—	31	11.3
Retail and Wholesale Sales	1	20	7.3
Mining	2	8	2.9
Transportation, Communication, etc.	3	5	1.8
Finance, Insurance, etc.	2	2	.7
Total	27	274	100.0

SOURCE: *American Branch Offices, Subsidiaries, Affiliates and Licensees in the Netherlands,* February 1959, and *Supplement,* March 1960, U. S. Embassy, The Hague.

tals about $325 million (Table 2). These investments include branch offices, subsidiaries, sub-subsidiaries, joint companies, affiliates, and licensees.[3] Of the 274 American or related Dutch firms operating in the Netherlands in 1960, 17 were branch offices, 153 subsidiaries, 4 sub-subsidiaries, 10 joint companies, 20 affiliates, and 60 licensees.

Location of Home Offices

The home offices of the firms with business connections in the Netherlands show a striking correlation with the industrial regions of the United States. The industrial northeast dominates, with 77 of the companies headquartered in New York City alone. There is a scattering through the plains states, and 18 companies are found in San Francisco and Los Angeles. The Pacific Northwest, the mountain states, and the Southeast are almost devoid of representation.

Distribution of U. S. Ventures

About half of the American investment is in oil refining and distribution facilities, but a variety of manufacturing enterprises are represented in the total number of 274 ventures (Table 2). The space for building oil refineries was available in Rotterdam, which has excellent shipping connections for obtaining the petroleum as well as an ideal location for barge trade in distributing the refined products by canal and the Rhine River. In addition, the Dutch produce significant amounts of petroleum. Of the 169 firms involved in manufacturing, machinery with 46 and chemicals (including oil refining by-products) with 39 are dominant. Of the new operations begun in 1958-60, 29 were in metalworking (13 in machinery), 12 in chemicals and drugs, 2 in petroleum, and 10 in other diverse types.

The three major metropolitan regions of Amsterdam (81 firms), The Hague (51 firms) and Rotterdam (33) firms) contain 60 percent of the total number of firms (see map). These three cities dominate the industrial and commercial development of the country and the attraction of U. S. investment to them is logical. The Hague leads Rotterdam in the number

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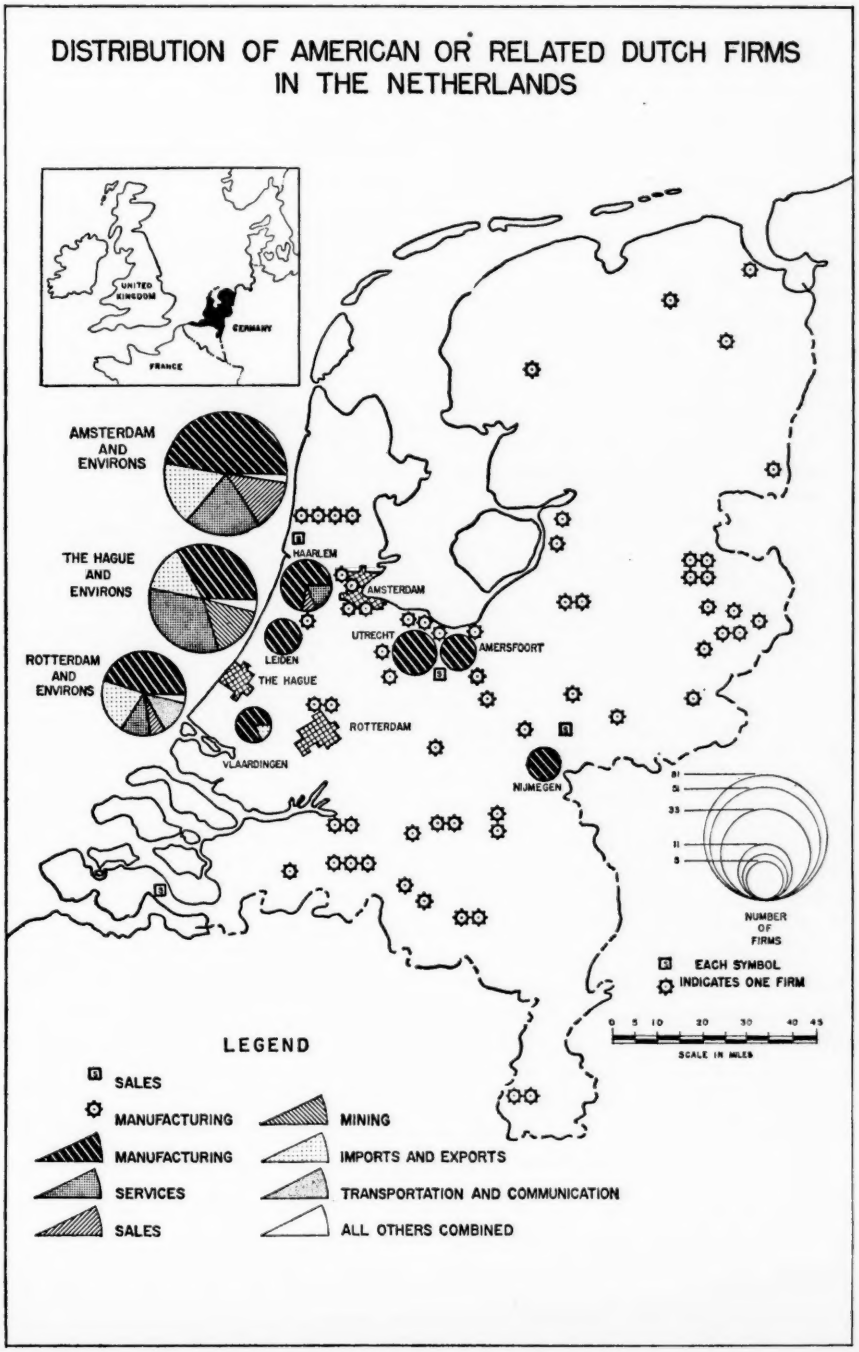
DISTRIBUTION OF AMERICAN OR RELATED DUTCH FIRMS IN THE NETHERLANDS
UNITED KINGDOM
GERMANY
FRANCE
AMSTERDAM AND ENVIRONS
THE HAGUE AND ENVIRONS
ROTTERDAM AND ENVIRONS
HAARLEM
AMSTERDAM
UTRECHT
AMERSFOORT
LEIDEN
THE HAGUE
ROTTERDAM
VLAARDINGEN
NIJMEGEN
81
55
33
11
5
NUMBER OF FIRMS
EACH SYMBOL INDICATES ONE FIRM
0 5 10 20 30 40 45
SCALE IN MILES
LEGEND
SALES
MANUFACTURING
MANUFACTURING
SERVICES
SALES
MINING
IMPORTS AND EXPORTS
TRANSPORTATION AND COMMUNICATION
ALL OTHERS COMBINED

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of firms, even though the latter is a larger and more important industrial and commercial city, primarily because many firms wish to be located in or near the capital city. The oil companies, for instance, have headquarters in The Hague, but the refining and storage is practically all in Rotterdam and vicinity. Diversity of types of U. S. ventures are found in all three of the major cities. In the remainder of the Netherlands manufacturing firms dominate and are scattered in south and east portions of the country, while only four are found in the north.

The largest city, Amsterdam and environs, with 872,000 inhabitants, contains about one-third of the American related firms. Almost half are involved in diversified manufacturing, followed in importance by services of various kinds, imports and exports, and sales companies. In The Hague, one-third of the enterprises are involved in manufacturing, another third in services, and 16 percent in mining, mostly petroleum firms. Manufacturing is also most important in Rotterdam with 45 percent of the firms, imports and exports are second with 21 percent, services and transportation and communication are in third place with 12 percent each, followed by sales with 6 percent.

Rotterdam has the best location for ease of contact, with Common Market countries via canals, the Rhine and land transportation, and with the rest of the world by sea. It has attracted such industries as oil refining and storage, chemicals, and others which can make use of the excellent harbor facilities built since World War II. The new Rotterdam harbor being built near the mouth of the Maas River, called Europoort, is intended to serve all of Common Market Europe and is being developed for heavy industry and coal and oil storage. Europoort undoubtedly will attract additional U. S. capital. The Hague and Amsterdam both have capital city functions. Amsterdam is located on the Ijessel Meer but connected to ocean trade by the North Sea Canal and to interior trade by the Amsterdam-Rhine Canal and land transportation. The three cities have the bulk of the established Dutch industry and are the main market and skilled labor centers of the country.

The pattern of concentration in the west to take advantage of locational, transportational, labor, market and other advantages, also represents a problem. The Dutch would like to relieve the congestion of further development of these areas by attracting more industry in the interior and east. Labor shortages, especially of certain skills, exist in the urbanized west, and new plant sites are scarce and high in cost.

Low cost agricultural labor which can be attracted to industry does exist in areas other than the urban west. Concessions are being made to attract industry to locations other than the major cities in order to help develop and broaden the base of the economy throughout the country. These incentives for the eastern and northern regions include direct subsidies of up to one-eighth of the construction costs and half of the land costs. Well developed national and regional plans can facilitate such dispersion but there is a natural reluctance on the part of both Dutch and American firms to locate outside the established concen-

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trated industrial and commercial regions. Nevertheless, there are 50 of our firms currently operating in southern, eastern, and northern Netherlands. All but two of them are engaged in manufacturing and depend largely on land transportation for movement of raw materials and finished products.

TRENDS

The impact of United States capital, personnel, technology and ideas is being increasingly felt in many parts of the world, but especially in Europe. Direct investment in Europe, however, represents less than one percent of the value of American domestic plant and equipment.[4] Our European investment increased 20 percent in 1960 and plans indicate a similar increase for 1961. Only about a fifth of the funds came directly from the United States.

The Common Market organization is largely responsible for increasing the proportional amount of U. S. investment in continental countries as contrasted to former concentrations in the United Kingdom. The rapid increase in the Netherlands is a good example of this changing pattern of U. S. investment in Europe. More firms will feel the need to be inside the Common Market in order for their products to compete in this important market. Dutch efforts to attract United States capital, as well as locational and other advantages, will stand them in good stead to capture more future American investments. The less industrialized areas of the Netherlands outside of the urban west with their available land and labor, lower costs and higher subsidies should prove to be attractions as should depressed areas which urgently need revitalization and are thus receptive to new capital.

In Holland, as in western Europe in general, the economy has been booming, stimulated by both foreign and private capital. Industrial and other aspects of the economic geography have been undergoing rapid changes. The healthy business conditions of western Europe represent a valuable pillar of strength to supplement the United States in maintaining the economic and political well-being of the western world. The part played by investments by American private enterprise has ramifications far beyond the profits to be gained by an individual company. The European's image of our country is being formed as much or more by the American businessman as it is by our ambassadorial staffs. The rapid Americanization of postwar western Europe is in large part due to the impact of the U. S. businessman, his methods and his products. U. S. capital and technical know-how is being successfully combined with European commercial know-how and skilled labor.

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Footnotes

1. Burck, Gilbert, and Parket, Sanford S., "Europe's New Age of Abundance," *Fortune*, December 1957.

2. Johnson, James N., "A Eurosite for American Business—a la Dutch Treat," *American Bar Association Journal*, XLVII, 1 (January 1961), 78.

3. These American-Dutch relationships are defined as follows:

Branch office—a local office of an American firm having no independent financial or corporate status.

Subsidiary—a Dutch firm established independently under Dutch law whose capital stock is 50 percent or more controlled by an American firm.

Sub-subsidiary—a subsidiary not established directly by the American parent company, but by another subsidiary or affiliate of the latter.

Joint company—a Dutch firm in which American and Dutch financial interests are evenly divided.

Affiliate—a Dutch firm in which the capital interest of the participating American firm is less than 50 percent.

Licensee—a Dutch firm which operates without American capital interests but which pays for American patent rights, production processes, or technical aid, on either a royalty, profit sharing or fixed cost basis.

4. *Report on Western Europe*, No. 10, October-November, 1960, Economic Research Department, The Chase Manhattan Bank.

God grant that not only the love of liberty, but a thorough knowledge of the rights of man, may pervade all the nations of the earth, so that a philosopher may set his foot anywhere on its surface, and say, "This is my country."

Benjamin Franklin, 1789

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MORDECHAI E. KREININ

The Escape Clause Versus A Trade Adjustment Program

A dilemma in the reciprocal trade legislation of the United States

Representatives of some 37 nations, the Contracting Parties to the General Agreement on Tariffs and Trade (GATT), have been meeting at Geneva for their sixth round of tariff negotiations since the end of World War II. The American delegation to that conference is authorized to offer concessions on some 2,500 import items. And for the first time in 15 years the delegation is vigorously seeking substantial concessions from foreign nations.

Unlike the early postwar years, Western Europe today is no longer preoccupied with reconstruction problems and is no longer plagued by balance of payments difficulties.[1] Most countries on the continent have been able for some time now to dispense with their exchange control schemes, import quotas and other direct regulation of international trade. Indeed, it is the United States which today faces a balance of payments deficit. Reduction of European tariffs against American exports thus looms increasingly important as a means of promoting exports. It becomes even more crucial when considered in light of the gradual adoption in Europe of regional integration schemes which will discriminate against American-made products. The extent of such discrimination can be minimized by mutual tariff concessions negotiated within the framework of GATT.

AN AMERICAN DISADVANTAGE

Yet, in spite of the potential gain from these negotiations, the American delegation approaches the bargaining table with an important disadvantage. The foreign negotiators are acutely aware of the fact that each American concession is subject to future withdrawal under the Escape Clause. That clause is a part of the Reciprocal Trade Agreement Act which provides

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the legislative authority for our participation in GATT. It permits an American industry whose production is partly displaced by imports to apply for relief from such competition in the form of increased tariff. If the industry can prove to the Tariff Commission that it was seriously injured as a result of a tariff concession, the Commission would recommend to the President withdrawal of that concession. Should the President, after weighing all factors in the case, accept the recommendation the concession is withdrawn and the mutual agreement with the foreign nation must be renegotiated. The fact that the escape clause has been invoked very sparingly in the past several years does not in itself constitute substantial reassurance to foreign nations. A change in the composition of the Tariff Commission which administers the clause and a reversal of the administration's attitude towards trade liberalization might easily result in more frequent recourse to the clause.

The Trade Agreements Program

To the economist, the escape clause is clearly inconsistent with the general spirit of the reciprocal trade legislation. He regards tariff reduction first and foremost as a means to improve economic efficiency through increased international specialization. A larger volume of trade is expected to drive domestic resources away from relatively inefficient import-competing industries into industries in which we have competitive advantage. A similar process would take place abroad with the obvious result of increased efficiency all around. The escape clause is essentially a mechanism for preventing such a shift of resources. By protecting industries from import competition it perpetuates allocative inefficiency, and is therefore considered to be in direct conflict with what the act was set out to accomplish. On the one hand we reduce tariffs and admit larger imports. But the instant such imports begin to have the salutary effect of driving resources out of inefficient uses, we call off the medicine.

This view of the main purpose of our tariff reduction program is by no means universal. It is certainly not shared by many legislators and public officials. In these circles the program is regarded primarily as a means of expanding American exports and of strengthening the Western alliance.

The Reciprocal Trade Agreements Act was originally proposed by the Roosevelt administration in 1934 as an anti-depression measure, designed to open up new export markets for American products. Our offer of tariff concessions on a reciprocal basis was not an end in itself. Rather, it was meant to constitute an inducement to foreigners to open their markets for our products. This view, while still widely held, has been superseded in the postwar period by a politically oriented objective. The program has come to be commonly regarded as a means of strengthening the economies of friendly nations through opening our markets to some of their products, as symbolized by the slogan "Trade not aid." The postwar dollar shortage contributed considerably to the importance of this objective. Most proponents of the trade agreements program—be they administration officials or representatives of other public bodies and private interests—stressed

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these two purposes when testifying before Congressional committees in support of extending the act. The economic end of attaining higher efficiency is usually given some lip service, but is not held in high regard.

To these officials, there exists no real inconsistency between an extensive tariff reduction program on the one hand and the prevention of injury to domestic interests on the other. If our aims are the opening of new export markets and the cementing of the Western alliance—why not attain them at the least cost in terms of displacement of domestic production?

The Randall Report

This indeed has been the major trend in our reciprocal trade legislation since the Randall Report of 1954. The Randall Commission, which was set up by the Eisenhower administration to study the goals of our foreign economic policy, recommended continuation of the trade agreements program with appropriate safeguards to domestic industry. The two extensions of the act during the past six years—a three-year extension in 1955 and a four-year one in 1958— contained liberal provisions for tariff reduction. But at the same time they strengthened considerably the protection to domestic interests against import competition.

Avenues of Protection

Three avenues of protection are open to domestic industries. First, under the peril point provision the Tariff Commission is required to investigate and determine, *prior* to any negotiations, the level below which the tariff rate on each product cannot be lowered without causing serious injury to a domestic industry. Our delegation is not authorized to offer concessions which would reduce rates below this level. First written into the act in 1948, the provision was repealed in 1949 and reinstated in 1951. The 1958 extension amends the peril point provision by requiring immediate institution of escape clause proceedings after peril point investigations disclose that existing rates of duty threaten or cause serious injury.

Next, if after a concession is granted a domestic industry feels injured by import competition, it can apply for relief under the escape clause. As explained earlier, that may lead to withdrawal of the concession. The clause first appeared in the 1951 extension of the act, although it had in fact been incorporated in trade agreements since 1943. The 1955 and 1958 extensions of the act have strengthened this clause in at least four ways. They permitted a narrow definition of industry for the purpose of escape clause investigations, thereby making it possible for a small segment of an industry to demonstrate injury even when the industry as a whole experiences prosperity and growth. Second, they enable domestic industries to base their claims for serious injury strictly on a decline in their share of the market even if absolute levels of production and employment are on the increase. Third, they increased considerably the level to which tariff rates can be raised in the event of serious injury. Finally, the 1958 extension introduced for the first time a breach in the President's authority for final decision in escape clause cases by authorizing a two-thirds majority of both Houses

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of Congress to override the President when he declines to accept a Tariff Commission recommendation.

A final avenue of relief is the national security clause. Administered by the Office of Defense and Civilian Mobilization, it permits withdrawal of concessions in cases where the affected domestic industry is essential to national security.

Incompatibility

The last two extensions of the act authorized tariff reduction of at least 5 percent per year. But this reasonably liberal authority was accompanied by strengthening the means of protection available to domestic industry. From an economic point of view these provisions have never been mutually compatible. But in the very recent past the existing methods of protection, and primarily the escape clause, have become incompatible with the main objectives of the act even for those who view the program strictly as a tool of foreign policy. The concessions granted by the United States during the past generation have more than halved the level of our tariff. The average rate on dutiable imports declined from 25 percent in 1934 to 12 percent in 1957, a reduction which practically eliminated all the "excess protection" on American imports. It is no longer possible to grant many concessions without inflicting injury on domestic industries, by simply curtailing the amount of excess protection. Any further tariff cuts are almost certain to displace some domestic production, especially in the highly protected labor-intensive industries in whose markets our European trading partners have particular interests.

Domestic Interests

Regardless of its objective, any significant trade liberalization program in the coming decade is likely to be injurious to domestic interests. An effective and strictly enforced escape clause designed to prevent such injury could jeopardize the entire program. If tariff cuts are needed to strengthen the alliance or to expand American exports they must be granted at a sacrifice of some American production. And in the process they will, in the long run, bring about the salutary economic effect of shifting domestic resources to more competitive industries. Any means to prevent the inroads of foreign products in the American markets are in conflict with tariff liberalization.

Given an adequate growth rate, the displaced resources will be able to shift to industries in which the United States enjoys comparative advantage. But this process takes time. In the short run a number of workers, employers and communities will be hurt. And in a society which assumes some responsibility for the economic well-being of its members, such an impact of public policy cannot be overlooked.

A SUBSTITUTE NEEDED

Legislators and public officials who are interested in continuing the program are slowly recognizing the need to find an acceptable substitute for the escape clause. If most Americans stand to benefit from the increased efficiency resulting from trade liberalization, a way must be found to compensate those who would incur the short-run loss caused by displaced domestic production. The way most

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commonly suggested is the one that has been advocated by economists and by such public interests as organized labor for quite some time now. It is a *trade adjustment program.*

A Trade Adjustment Program

Instead of protecting import-competing industries by the escape clause, thus perpetuating inefficiency, why not promote their transfer to lines of production in which they can compete effectively? The government can facilitate such movement of resources via a trade adjustment program designed to aid those who are injured by import competition.

To employers the program would offer low interest loans, aid in research, market information, and other assistance in moving to new lines of production. To workers it would provide opportunities for retraining, and offer to defray transport costs to new locations whenever necessary. And to communities injured by import competition it would offer any assistance necessary to diversify the industrial base and adjust to the new circumstances.

Empirical studies have indicated that the magnitude of the prospective short-run injury would be relatively small. It is very unlikely, for example, that any extensive round of tariff concessions would result in displacement of more than 20,000 workers—a very small number in a labor force of 65 million. The program would therefore not be very costly.

Objectives

Substituting a trade adjustment program for the escape clause would help attain both the economic and the political objectives of the reciprocal tariff concessions. Specialization would be enhanced, our export markets expanded, and our allies strengthened through trade.

It is because of these obvious merits of trade adjustment assistance that the proposed program is now receiving serious public attention. For the first time in the postwar period it has also entered the political arena. While the Republican platform still advocates the escape clause mechanism for protecting domestic industries from serious injury, its Democratic counterpart pledges support for trade adjustment assistance to replace or at least supplement the escape clause. Thus the 1960 Republican platform states:

> Carrying forward, under the Trade Agreements Act, the policy of gradual selective—and truly reciprocal—reduction of unjustifiable barriers to trade among free nations. We advocate effective administration of the Act's escape clause and peril point provisions to safeguard American jobs and domestic industries against serious injury.

The Democratic platform specifies:

> World trade is more than ever essential to world peace. In the tradition of Cordell Hull, we shall expand world trade in every responsible way.
>
> Since all Americans share the benefits of this policy, its costs should not be the burden of a few. We shall support practical measures to ease the necessary adjustments of industries and communities which may be unavoidably hurt by increases in imports. . . .
>
> . . . The Democratic administration will help trade-affected industries by measures consistent with economic growth, orderly transition, fair competition, and the long-run strength of all parts of our nation.
>
> Trade-affected industries and communities need and deserve appropriate help through trade adjustment measures such as direct loans, tax incentives, defense contracts priority, and retraining assistance.

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But partisan differences on this issue are not as clear-cut as might appear from the platforms. Such influential members of the Republican Party as Senator Javits of New York are staunch supporters of the proposed assistance program and have proposed studies to estimate its scope.

It is becoming widely recognized that adoption of such a program would resolve the basic inconsistency in the trade agreements legislation. The program would permit the United States to carry out the purposes of the act to the best political and economic advantage of the free world, and give our foreign economic policy a direction that is becoming to the greatest trading nation.

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1. *Editor's Note:* As we go to press, it appears that the latter statement is no longer true of the United Kingdom.

A Peaceful Use for the Submarine

The submarine has evidently come to stay; and though, as an engine of naval warfare, it may not prove to be all that French enthusiasts anticipate with glee, there is a pleasant, practical ring about its proposed adoption as a means of crossing the Channel and escaping *mal de mer*. This waterway is only twenty-odd miles wide; and, given a type of vessel in which passengers could spend three quarters of an hour without inconvenience, at a level low enough to be out of the way of sea traffic, there is no reason why submarines should not be run as a kind of electric trams on a cable stretching from England to France.

Country Life (December 14, 1901), 763.

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JUSTIN J. CONDON

A General Management View Of the Personnel Function

There is a clear relationship between good personnel administration and company success.

Industrial relations people of late have become increasingly concerned about the status of the personnel function in an economically austere business climate. The literature of business management is filled with articles discussing the lack of recognition given personnel administration, or, indeed, fearful for its survival as a major staff function in times of recession. Many such articles are written by personnel people themselves, or by consultants or teachers who are specialists in personnel administration. The quotation which follows is typical of this sharp criticism of the personnel function.

Personnel administration is still something of a Johnny-come-lately compared with the old, accepted business functions. Since it is not so obviously linked to profits or survival as are sales or production, its standing in industry has often been uncertain and its course unclear.

Today, the status of the personnel man varies widely from company to company. In one company, personnel management sits at the right hand of general management; in another, it is a function subordinate to a plant manager.

The personnel men with the highest salaries and the greatest prestige are those who function mainly in the area of labor relations and union negotiations, in which a real and immediate threat to profits or even to the survival of the business is present. The rest of the personnel function is often limited to the hiring of hourly workers and clerks— never to the recruitment and selection of top or key management personnel— and to such specific areas as supervisory training. People with very little or no specialized training feel that they are competent to become personnel managers, and, in fact, top personnel men at the vice-presidential level are often appointed from other areas of specialization (marketing, engineering, etc.), with no prior training or even experience in personnel administration.

A great deal of the responsibility for the present state of personnel administration lies with personnel people.

For one thing, many people engaged in personnel work are deficient in training, native intelligence, and knowledge of the principles of business administration. Because their training and experience have been in fragmentary areas of personnel, they have become specialists in the worst sense

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of that word, and they cannot gain rapport with general management.

Only when real crises arise—the threat of union organization, a latent rebellion about rates of pay, a shortage of labor, or a marked deficiency in supervisory skill — does the manager turn to his personnel department. And he often finds that the personnel man is incapable of rising to the occasion. For one thing, the manager hasn't selected a man who could get results in the first place.[1]

It is the purpose of this article to consider personnel administration from a different vantage point—that of general management—with the goal of bringing closer together the efforts of personnel managers and the managers of the enterprise as a whole.

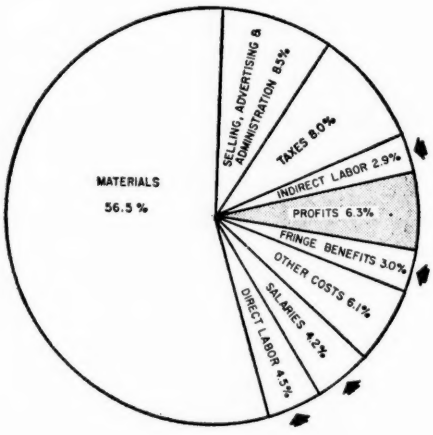
Goals of General Management

The general manager sees the business through eyes which differ from those of the personnel man. Basically, the general manager is trying to get certain things done—to bring into production a new product, to rearrange a plant, to improve its physical condition, to run a safe plant, and to obtain quality products—with the object of making a profit. He is not interested in the personnel functions as ends in themselves, but rather as they contribute to the larger objectives of the business. This is where many personnel specialists lose rapport with the rest of the organization. They tend to think of salary administration, training, or management development programs as ends rather than means, even to the point, in some cases, where such programs interfere with the effective achievement of the larger goals of the business.

General managers, from corporate presidents on down, have one common yardstick by which they are measured —profit. This suggests the key by

EXHIBIT I

ANNUAL ANALYSIS OF SALES DOLLAR



which personnel administrators may evaluate their own performance: what is its contribution to profit? The remainder of this article will discuss some of the ways personnel services can aid the organization as a whole to accomplish its objectives, thereby making a contribution to profit.

A Look at Profit

Since profit is the means by which management is measured, a useful starting point is to look at profit itself. If the manager is seeking to maximize earnings, where does he look?

Exhibit I illustrates the income statement of a representative manufacturing operation. The major claims against income show on the chart. It can be seen at a glance that materials consume over half of the sales dollar. Other large items are selling and administration. Taxes, of course, are larger than profit. Of interest here, however, are certain claims against income which are specifically identified

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EXHIBIT II

PERSONNEL FUNCTIONS

Conventional	*Advanced*	*Unconventional*
Employment and Placement	Communication	Controlling Cost of Salaried Personnel
Labor Relations	Forecasting Personnel Needs	Utilizing "Indirect" People
Wage and Salary Administration	Attitude Feedback	Organization
Benefits and Services	Personnel Research	Key Men
		Supervisor-Employee Relationships

with the personnel function. These are marked with arrows on the chart. Fringe benefits, for instance, are nearly half as large as profit. Salaries are two-thirds as large. Direct labor is about three-fourths of the profit figure. Indirect labor is almost half the profit figure.

Since profit is left over after all other claims have been paid, general managers must control the other claims so that what is left over, profit, is as large as possible. Note how drastically just a one percentage point shift from one of these other claims against income would increase profit.

PERSONNEL ACTIVITIES AND PROFITS

When we relate various personnel activities to profit, they may be divided into three rather arbitrary categories. The first group includes the "conventional" functions, those which are widely known in almost every sizable personnel department. The second group includes some of the less widely performed activities. These may be called the "advanced" functions, those which are carried out by larger or more advanced departments. And finally, there is a group we may call "unconventional." These may be performed by few, if any, personnel departments. This group exists largely in the form of unsolved problems, problems which confront general management and which have a large effect on profit.

These three groups of activities are shown in Exhibit II. They are not intended to be a complete list of personnel activities related to profit. They are intended, instead, to suggest some of the kinds of functions appearing under the personnel heading which represent areas of concern for general management.

Conventional Personnel Activities

The first category of functions is the conventional one. These are personnel functions which are well known throughout industry. The fact that they are commonplace, however, does not lessen their importance. The factor which should be stressed in discussing these conventional functions is the importance of quality of performance.

Employment and placement. It is one thing to perform a function and it is another to do it well. Employment and placement of people, for example, have important implications for most companies. Consider the cost of em-

ploying a man at $10,000 to $15,000 a year, of moving him and his family from some other location, of spending several months training him in his position, then of spending considerably more time learning how well he will do his job, and finally concluding that a mistake has been made and the results hoped for have not been achieved. The cost could well be $30,000, not including the cost of the failure of the given function to do what was expected of it.

Labor relations. This is another commonly performed function. There are many cases in which quality of the job performed in this area can be decisive. Many experienced managers have seen plants so hopelessly entangled in labor relations problems that management has given up the plant in desperation, deciding to move to some other location. On the other hand, there are many plants where competent management has been able to solve complex labor relations problems, ending up with a plant of high efficiency and good morale. These are clearly cases where the personnel function, well done, has an immense effect on profit.

Wage and salary administration is another area which relates to profit. Inequitable pay can cost a company money, either in the form of overpaying people, that is, paying them beyond what they are worth in the market place, or else resulting in cost when good people are lost because the compensation does not adequately reward them.

Benefits and services. Finally, most personnel administrators have under them the administration of various benefits and services. Many of these are now lumped under the heading of fringe benefits. These, as was indicated in the profit chart, are now a substantial business cost, amounting to nearly half as much as profit in a typical year. It takes exceptional competence to understand today's fringe benefits and to control them in such a way as to get maximum results for the money spent.

Advanced Personnel Activities

The next category of personnel functions may be regarded as the advanced group. One of these is called communication. This relates to the whole subject of understanding and attitudes about the business enterprise. When a general manager is trying to carry out his own responsibilities and the specific objectives of his company, how does he secure the cooperation of the people needed to carry out these objectives? One way many managers now attempt to do this is through various forms of communication.

Written and spoken communications. Some personnel people who take a limited view of their responsibilities in communication may turn out a plant publication and think that does the job. In the sense in which the word is now coming to be used, however, communication goes to the very heart of the enterprise. It includes various kinds of publications which people read and believe. It includes meetings and their effectiveness. It includes verbal communication and how well understanding is transmitted. It also deals with the upward flow of information. It even gets into such complex matters as the relationships between departments which must work in coordina-

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tion with each other, such as sales and manufacturing. In communication, a modern, well-informed personnel administrator can be of help to general management if he understands the need for it and if he can help strengthen performance in this area.

Forecasting personnel needs is another function which more progressive personnel administrators may undertake. It is one thing to wait for a requisition to come in and then go out and fill it, and it is another thing to be sufficiently aware of the direction in which the organization is going to anticipate, perhaps years ahead of time, the need for people and planning for these needs. Here is an example to illustrate the point.

Many years ago the Sears, Roebuck organization took some rather drastic changes in direction from its original mail order business. It was determined by top management that it would be necessary to go into retail stores extensively if business leadership was to be maintained. The Sears organization set about in a very deliberate way to obtain and develop qualified men so that their stores, which now number in the hundreds, could be manned by competent managers. Sears, Roebuck is one of the leading merchandising organizations in the world. They would have been unable to achieve this position and to achieve the profits they now enjoy if they had been unable to man their stores as they do today.

Attitude feedback, as a personnel function, may be put under the advanced listing. Management, if it is to direct the activities of others, must be well informed on what those others think. This is frequently very difficult. Most managements who are now dealing with unions were, in their past histories, surprised to learn that their employees were sufficiently disgruntled even to want a union. Today, though managements may have learned through this experience, there is no less need for management to be informed on the thoughts of the people in their organizations. This becomes especially critical in a time of union negotiations, when management is concerned with the outcome of a strike vote. The need for knowing employee attitudes is also critical when employees may be choosing between a union or no union. But even in day-to-day operations, it is essential for management to be well informed on the attitudes and understanding of employees. Some companies today are experimenting with attitude surveys, suggestion systems, and man-to-man visits. In any event, it is an important personnel function to see that management is well informed on the attitudes of employees.

Personnel Research. Progressive personnel departments may enter this area. It is one thing to accept plant conditions as they are and it is another thing to question intelligently whether things should be done the way many of us take for granted. In any given plant, for instance, there may be some method of pay which was right in its time and which may now have become obsolete. Does it get the results that its creditors expected of it? Another area which many personnel administrators have, of course, discussed, is the effect of automation. What is automation likely to do to levels of employment, to methods of paying people, to the kinds of skills needed to perform

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the work? These are proper questions for progressive personnel departments to be considering in advance.

All of these functions which are listed under the advanced category have a clear and direct effect on profit. They explain in many cases why management is unable to achieve its full goals. These are areas in which personnel administrators may make a greater contribution to profit.

Unconventional Personnel Activities

The third category of personnel functions includes those which may be called unconventional. These may be performed by few, if any, personnel departments. While some personnel men may include these activities in their responsibilities, few achieve a high degree of success here. Many of these exist in the form of unsolved problems, problems for which general management is seeking answers. These are also areas which have a major effect on profit.

Controlling cost of salaried personnel. As an example, consider this problem. The profit chart indicates the increase in the share of the income dollar which is being taken up by salaries. As industries change with time, the efficiency of the blue collar worker is relatively well controlled by good supervision and industrial engineering techniques. A company which has good standards and good supervision may be reasonably sure that it is getting a full day's work from the employees doing what we call direct labor. But what control do managers have over the utilization of salaried personnel? This is an area in which our knowledge is most primitive. Parkinson's law, which is considered somewhat humorous by cartoonists, is a serious problem to the manager who is unable to keep his overhead at levels which permit him to earn a profit. If the manager, in desperation, demands that every requisition receive his personal approval, he will find himself debating whether the mail department truly needs another messenger boy. This is an area in which personnel administrators can be challenged to develop ways in which management could be assured, with reference to salaried personnel, that they are obtaining the same efficient performance which is obtained in many well-run plants with factory personnel.

Utilizing "indirect" people is a second problem which also is becoming increasingly important. These are such men as electricians, millwrights, toolmakers, and others who are not directly producing goods. Here managers are confronted with high wages of the skilled trades and the absence of clear work standards, complicated, furthermore, by developments in automation. The unions themselves are perplexed by the change of events. What happens to the classic occupations, such as machinists, millwrights, and electricians, when a machine may contain interrelated parts which cut across all those occupations? There is an opportunity here for personnel people to develop ways in which management can be sure that indirect people are of the proper quality and quantity to get the job done best at the lowest cost.

Organization. A third area of challenge for personnel administrators is that of organization. For years, of course, personnel people have consid-

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ered this their proper province. It is not at all unusual for personnel administrators to be familiar with position descriptions, job evaluation, organization charts, and similar paraphernalia of the trade. In the context in which the general manager may use the word, organization may be thought of in a somewhat different way.

In carrying out his responsibilities, the general manager or line manager is concerned with getting things done through people. He finds to his dismay, however, that what he seeks to do frequently falls short of his aspirations. Costs may be higher than planned, or the program is carried out in much more time than was originally contemplated, or perhaps too many hours are spent doing again something which was not done properly the first time. When a manager goes back over a given experience trying to learn where he went wrong, he may find that it is due to the incompetence of some individual. In that case, he would seek to find a remedy, either in training or in developing some more competent man. Frequently, however, he finds that results did not measure up to expectations, even when competent people are trying to get the job done. He finds there was a slip somewhere in the way these people worked together and that if they could have been used differently they might have succeeded. Organization in this sense, then, becomes a highly complex thing.

As an example, consider some of the ways in which organization might be viewed. It is customary to organize people by function, so we are familiar with personnel administrators, purchasing people, accountants, engineers, and so forth. People may also be organized by product, so that in a plant which produces several products there might be an organization built around each product. There may also be organization by geography or area, with superintendents of Plant 1, Plant 2, Plant 3. People may also be organized by process. It is possible to have a supervisor of the paint department, the machining department, and the assembly department. People might be organized by time, so that in bringing a new product to market you may have a procedure in which different people are responsible for different achievements at different stages in time.

How these things are done has a great deal to do with the success with which they are carried out. The traditional functional organization, for instance, is frequently unable to keep up with a fast-moving project such as a new product. It becomes necessary in some cases to appoint project coordinators to direct the functional members to get results on time. These are aspects of organization which present opportunities for personnel administrators.

Key men. Another area which might be listed as a continuing problem is a familiar one. It probably should be listed under the conventional functions, except that in many cases the problem is still unsolved—the difficulty of securing competent managers. When a general manager is confronted with a difficult task he usually seeks some competent man on whom he may depend to get results. This requires that rare individual, the key man, who is capable of coping with the unusual. Personnel administrators who are looking for additional ways to help their

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organization could make substantial contributions if they could develop ways to find exceptional men.

Supervisor-employee relationships. Another somewhat familiar subject which is listed in the unconventional column is that of the relationships between supervisors and their subordinates. It is listed in this column because the problem is to a large degree still unsolved. Most people in industry use management development programs, performance reviews, and position descriptions. In many cases, however, they do not live up to the expectations of their creators. Performance reviews are somewhat disappointing and confusing to both the rater and the ratee. They may even be frustrating to the personnel administrator who is trying to get the people to do the rating. Some organizations have had exceptional experiences which increase our optimism about what may be achieved when these things are done properly.

In one organization a line manager voluntarily developed a performance review system in which he reached an understanding with his own men about their specific responsibilities. This job was carried out in such a way that the responsibility and measurements of results were put in terms that the men themselves clearly understood. Numerical standards were set up for such things as production, budget performance, housekeeping, and similar activities. What was unusual in this case, however, is that once these understandings were reached and once the methods of measurements were developed, the individuals concerned were able to improve their own performance substantially. Results were seen in such tangible forms as lower scrap, better quality, better performance to schedule, and other yardsticks which made a most definite contribution to profit. This is a case where a personnel function made a most concrete contribution to profit.

EVALUATION

Despite the somewhat dismal view of the personnel function which was represented in the quotation cited earlier in this article, it is rare to find this same severe criticism coming from top executives of leading business organizations. Some highly entertaining books and articles have appeared in recent years denouncing human relations, ridiculing psychological tests, and criticizing management development, as well as many other efforts in the personnel field. The fact remains that important personnel problems persist which are most costly to business. That is why general management is still receptive to efforts which will bring about improvement in the utilization of the human resources of an enterprise. An effort which is only partially successful in solving a personnel problem is more useful to business managers than criticism which offers no constructive remedy.

The presidents of a number of outstanding corporations were asked some time ago to rate the companies which they regarded as those which are best managed. They were also asked to evaluate the factors which they thought would most influence success of business enterprises in the next decade. Their conclusions list eight keys to business success in the 1960's.[2] These are the factors rated in order of importance by this group of business leaders:

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Marketing Strategy
Organizational Planning
Research and Development
Production Techniques
Financial Management
Personnel Management
Labor Relations
Public Relations

At least four of these factors are ordinarily considered personnel functions. The high value which these men place on such matters as organizational planning, personnel management, labor relations, and public relations gives a good measure of the opportunity which lies before personnel managers in the coming decade.

Summary

It appears that in the minds of most top business leaders is a clear relationship between good personnel administration and company success. It is also apparent that many existing personnel activities touch upon the same problems which concern general management. It does not seem necessary for progressive personnel administrators to make any revolutionary change in organization or function to bring about better results. There is, however, further opportunity for improvement in the quality of personnel administration today. This opportunity probably lies in the area of greater identification on the part of personnel managers with the goals and problems of general managers. Personnel administrators in the next decade who can bring to general management any substantial help in the problems reviewed in this article need have no concern about the importance of the personnel function in the sixties.

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1. S. Vincent Wilking, "What's Wrong with Today's Personnel Administration?," *The Management Review*, September, 1960, p. 16. Reprinted by permission of the author.
2. "America's Best Managed Companies," *Dun's Review*, September, 1960, p. 38.

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(Continued on page 80)

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READING FOR BUSINESS AND PLEASURE

Electronic Business Machines[1]

This book on computer systems and their applications is the outgrowth of lectures at Dundee Technical College (Scotland) in 1958.[1] Eight British specialists in the computer field plus B. Nanus of MIT and R. H. Gregory of Sylvania Electric Products (then of MIT) discuss the spectrum of topics in business uses of computers, from the internal organization of a computer through programming, business system design, the preparation of computer personnel, auditing considerations, telecommunications, and file maintenance with magnetic tape.

The book does not discover any new ground, but gives in one volume a rather comprehensive coverage of existing 1958-1959 knowledge in the field of computer application in business. The most thorough treatment is in the section on programming (110 pages). It would not be possible for the uninitiated to learn program writing from this material, but this comes as near to it as any self-help lesson on programming this reviewer has seen, bar none. Section II (106 pages) deals with Business Management and Electronic Data Processing. Chapter headings here are:

The Computer Approach to Business Problems

Managerial Decisions for Computers and Organization Patterns

Business-systems Analysis and Design

Computers and Business Size

Selection and Training of Computer Personnel

Economics of Computers

Problems of Auditing and Control

The material of Section II is less specific than that of Part I, but this is understandable, because organizational situations, management attitudes, and processing requirements vary so greatly among firms. No simple set of statements about organization for computers, personnel, evaluation, and so on, would be valid except for a few cases. Even so, the book gives a good review of the many-sided managerial complications in office automation.

Part III is about Computer Equipment and Applications, including Input and Output Equipment, Magnetic Tape, Punched Cards, and Telecommunications.

Except for parts of Section II (lectures by Professor Gregory) and Section I (programming being quite universal in approach), the entire book is geared to English experience; however, this does not invalidate its value to Americans as a fairly complete answer to the question: "Computers, what are they and how should they be used?"

Gardner M. Jones
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Listen, Yankee[2]

This book concerning the Cuban revolution is reading neither for "pleasure" nor for "business"—at least not for pleasure in any sense and not for

1. J. H. Leveson, Editor, *Electronic Business Machines*. New York: Philosophical Library, Inc., 1960. 272 pp. $15.00.

business in the narrow sense. In this age of exaggeration by superlatives, one might say that "this is reading for survival." Such a description involves only a little exaggeration. The theme concerns us all; but more especially it concerns businessmen with interests abroad, for it is a bitter indictment of U. S. business in Latin America and particularly in Cuba.

Mills presents a series of letters, frank, critical, and sometimes pleading, from a hypothetical Cuban—a young, intelligent, brash, sincere, sometimes rude, revolutionary. These letters present the revolutionary case in a powerful and brilliant form. Their very style gives one the flavor of the continuing revolution (little emphasis is given to its early military aspects)—imaginative, disorganized, pragmatic rather than ideological, mistake-making but pushing on, and above all sovereign and proud.

From the start, the reader reacts negatively as he is being told off in no uncertain terms by some young whipper-snapper. And the style is so good that one soon begins to identify this Cuban. In reviewing the book, it is a temptation to list the Cuban's charges, refuting them when possible. (Mills examines his own reactions to the letters in a final "Note to the Reader.") But this is to miss the point completely. To criticize Mills on the grounds that he has made a weak (or strong) case against the U. S. or that he has made a good or bad case for the Revolution is to swing savagely at a non-existent straw man. The only legitimate point is: how accurately does Mills' ambitious work reflect the views of those Cubans now in power? This is an impossible judgment for those not having visited Cuba recently. But Mills is well enough known and a good enough observer that it can be taken on trust that he reflects the Cuban viewpoint sufficiently well that it must be taken seriously.

The Cuban image of the *gringo* is not a pretty one, and it ought to give us pause for thought about how deserved it is. Listen, Yankee, and hear a few of the things he has to say:

> . . . we don't even know you. How could we? . . . What we know is the big, sharp edges of Yankee politics and Yankee imperialism. To us, those are not just dirty words. They've been facts of our every day lives as we've lived them in Cuba. It's been the idle tourists and the sugar monopolies and the support of the Batista dictatorship and the giving of medals to his murderers and our not having work to do and seeing the land lie idle while we squatted on the edge of the road in our filthy huts—that is what most of us know of North America.
>
> . . . . . .
>
> But now we've reached a point where your Government probably can't say anything reasonable and sane to us. We certainly don't expect them to. Not any more. In fact, what we want from your Government and your monopolies can now be put into just one word: "Nothing." Or in four words: "Just let us *alone*."

The reader will also find of great interest the Cuban view of its own revolution— its aims, methods, failures, and dreams. This is not an unbiased, dispassionate analysis, but it is impossible not to understand (and like) the revolutionary more after going through this soul-searching with him.

It is not important that the reader like what the Cuban says (he won't) or that he agree with the Cuban's picture of the Yankee (how accurate is

2 C. Wright Mills, *Listen, Yankee*, New York: McGraw-Hill Book Company Inc., 1960.

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our picture of the people of any foreign nation?), but it is important that we have a notion of what a foreigner thinks of us, right or wrong, *because it is* what he thinks. Cuba assumes an undue importance for us, perhaps, because of proximity, but there may be fifty other Cubas—just waiting to happen.

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Department of Economics

The Professional Soldier[1]

President Kennedy, since the beginning of his incumbency, repeatedly has spoken of his concern over the ability of the country to defend itself in the event of a limited war. In the same vein, business, political and military writers in newspapers, magazines and books have for several years weighed the validity of our policy of "massive retaliation." One of the books in this area is Morris Janowitz's *The Professional Soldier*. Dr. Janowitz, a professor of sociology at the University of Michigan, does not concern himself solely with defense policy, however. His book undertakes to draw "a social and political portrait" of the military leadership as it has evolved in the twentieth century.

Other recent books have been written to explore the increasingly significant impact of this uniformed power group on the economic, political and social patterns of the United States. Dr. Janowitz's scholarly analysis goes deeper, tracing the evolution of what he calls the "heroic leader," the "military manager," and the "military technologist," and their changing roles in the military hierarchy. He decides that we need all three, but is careful to point out that "the purposes of military organization are profoundly different from those of business organization, and the loyalties and logic of the professional soldier in his management capacities are also different."

To cope with limited wars or bigger wars, Dr. Janowitz believes, the military organization must "live with a series of dilemmas." It must first "strive for an appropriate balance between conventional and modern weapons." Second, it must "assist in accurately estimating the consequences of the threat or use of force against the potentials for persuasion and conflict resolution." Third, "military leaders must make the management of an effective military force compatible with participation in political and administrative schemes for arms inspection and control." The latter two, of course, are new roles for the military, who traditionally have sought to avoid involvement in the field of politics.

The author proposes an organization to meet these dilemmas, calling it a "constabulary force." He says, "The military establishment becomes a constabulary force when it is continuously prepared to act, committed to the minimum use of force, and seeks viable international relations rather than victory, because it has incorporated a protective military posture." Such an organization, it is argued, also would facilitate the resolution of civil- military problems, including the adequacy of forces, whether for conventional warfare or for strategic deterrence. Dr. Janowitz does not claim, of course, that these advantages are inherent in

1. Morris Janowitz, *The Professional Soldier*. Glencoe, Ill.: The Free Press, 1960.

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organization, but rather in an idea which "draws on the police concept." His thoughts are provocative, certainly, although they are not likely to win many converts among military leaders themselves.

The greater part of the book is concerned with the "social and political portrait." The author examines the professional officer's social origins, his career motivations and development, his style of life, his ideologies, and his political behavior and techniques. The completed portrait is one of a man "from an old-family, Anglo-Saxon, Protestant, rural, upper middle-class professional background," but the portrait is undergoing change in the direction of "greater representativeness." This man, the author says, is one of "conservative political perspectives."

Unfortunately, Dr. Janowitz too often states his opinions as facts, and offers generalizations based upon inadequate data. There is also a tendency to invent categories—heroic and managerial, domination and initiative, ascription and achievement, absolute and pragmatic, and others—which somehow fall short of convincing the reader. Nevertheless, *The Professional Soldier* is a stimulating book, one well worth reading for anyone who wants to know more about the group into whose hands has been placed the defense of the nation.

Major James J. Ford
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The Automobile and World Peace

The motor-car race from Paris to Berlin is an incident of importance outside the region of locomotion. When Frenchmen and Germans consent to become competitors in the latest and most fashionable pastime, it is safe to assume that much of the old hostility has passed away, and "Let us have a motor match" seems to be the modern equivalent of letting the lion lie down with the lamb. Every incident of this kind is so much towards repealing the policy of *la revanche.*

Country Life, X, 3 (July 6, 1901), 3.

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(Continued from page 75)

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